Railway Age

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Railway Purchasing Officers and Motor Transport

AS the railway adoption of motor buses and trucks increases—and evidences of the increase are appearing daily—more and more purchasing officers of railways are adding "motor buses" and "motor trucks" to the long list of things that they buy. A few of the purchasing officers attending the convention this year have already had the novel experience of signing orders for motor buses. Most of them at one time or another have bought trucks, if not for freight hauling, at least for use in shops and storehouses. Those who have not had such experiences are particularly fortunate in being able to see and study a comprehensive exhibit of motor transport equipment at this time. Virtually all the manufacturers of buses and trucks have their products on display in the motor transport tent. Before they buy buses and trucks and automotive equipment, purchasing officers will want to know all they can about the many different types that are available. Some of them may require such information immediately; others may want it for possible—even probable—future use. Whether the immediate necessity exists or not is immaterial. The opportunity to get acquainted with the kinds of buses and trucks that the automotive manufacturers produce is at hand and no purchasing officer who is wide awake—and what other kind do we have at these conventions?—will ignore it.

Are Permanent Shops Advisable in Car Work

DURING the discussion yesterday of the report of the Committee on the Design of Shops and Engine Terminals, the remark was made that in view of the growing tendency toward consolidation, individual roads should go rather slow in the construction of large shops of a permanent nature. Since the development of the progressive system of freight car repairs, it has been found possible by the concentration of a large number of cars of similar construction requiring approximately the same degree of repair work, to utilize car repair plants which are not equipped with the most modern facilities. Many shops now used for car repair work on the progressive system evidence the possibility of utilizing facilities which are of a more or less temporary nature, such as portable equipment. The nature of the work demands that the facilities be of a sufficiently flexible type that they may be readily adapted to the work of repairing different series of cars at successive periods. Portable electric crane trucks and hoists are examples of recently developed devices that have simplified the problem of handling materials and repair work around car yards and shops in a manner which seems to have obviated in many instances the necessity of installing permanent facilities. Possibly a study of the uses of such modern equipment will point to the economic possibility of temporarily equipping an existing plant in a manner that will make possible an output to compare favorably with a large shop with permanently organized facilities.

Mr. Vauclain's Words of Wisdom

THE address made by S. M. Vauclain, president of the Baldwin Locomotive Works, at the meeting of the Mechanical Division yesterday, was full of wisdom and should be especially inspiring to younger men in the railway and the equipment and supply fields. We are going through something like a revolution in the transportation business which, of course, affects the equipment and supply business, and it is presenting many problems which are likely to seem rather appalling to men who are only getting well started in business. Mr. Vauclain speaks from a long experience. He has seen many great changes in the transportation industry and many great ups and downs in business. He saw a large part of the railroads bankrupt in the 70's and again in the 90's, in both of which periods there was a long succession of years when railroad traffic did not grow and equipment manufacturers suffered much more severely from lack of business than they did at any time following the depression in 1921. After each of these periods he saw the railways come out stronger than ever and afford a better market than ever before for the manufacturer. Therefore, he bids

the oncoming generation of business men to be optimistic about the future of the United States and of its railway and railway equipment and supply industries and to recognize the fact that there is more opportunity in these fields than there ever was and that the measure of success attained in them will depend, as in the past, upon the initiative, ability and energy used in seeking success. Mr. Vauclain has rendered a real service to railroad men and to railroad equipment and supply manufacturers by making an address of such broad vision and so full of optimism and good sense.

Electric Power for Shop Use

A CLOSE observer of the machine tool display cannot fail to be impressed by the fact that practically all of these machines are adapted to the electric motor drive. Both alternating and direct current motors have been developed to a remarkable degree of efficiency and both types can be used for machine tool drives. In the operation of tools where constant speed is maintained, the a.c. motor will perform just as satisfactorily as will the direct current motor, and the installation of the a.c. motor is considerably cheaper, both in first cost point and subsequent maintenance. Where there are many machine tools operating at constant speed, it would be a needless expense to install direct current motors. On the other hand, where certain machine tools must necessarily be operated at variable speeds, the a.c. motor does not meet the requirements nearly as well as the direct current motor. For example, when turning wheel treads hard spots are often encountered which make it absolutely necessary to slow up the machine while the cutting tool passes over such spots. For such work the direct current motor is greatly superior to the a.c. motor because the principles upon which it is designed lend themselves admirably to almost any variation in speed that may be desired. The problem therefore, of applying electric power to machine tools narrows itself down to the plain statement that the ideal shop should be equipped with both alternating and direct current energy, either of which may be used to advantage as circumstances dictate. This is not a particularly difficult arrangement to effect, and can be accomplished with entire satisfaction by the simple installation of a suitable motor-generator set. Such equipment has been extensively installed and makes it possible to use alternating current as a prime source of electric energy; at the same time it permits the use of direct current where it is best suited to the conditions.

Basic Training of Foremen

OBVIOUSLY a foreman must thoroughly understand the details of the work over which he has supervision. He must be a good mechanic, although there are not a few successful mechanical department officers who insist that it is even more important that the foremen should understand how to deal with and direct the energies of the human element. Several mechanical department superintendents have recently indicated that in their opinion the best basic training for a foreman is a good apprentice course. Is it not important therefore that more attention be given to the selection of apprentices, in order to insure an adequate supply of foreman material in the future? Moreover, is it not advisable to check up the apprentice course to see that it is as thorough and complete as possible, and to make some provision for a study of the young men while they are apprentices and see that the most promising ones are given opportunities to develop their special abilities. There are some young men in every group, particularly if special attention is given to recruiting, who have a better schooling than the average or who are naturally endowed with stronger personalities or leadership ability. Such young men frequently respond in a marked degree to any effort that is made to help them improve their opportunities and make the best of themselves. Ought we not constantly to be on the look-out, even among the apprentices, for future foremen and supervisors? Should this be regarded as an incidental by-product of the apprentice system, or should it be one of the well thought out objectives?

Demonstration Versus Argument

PLACED over the door of the air brake instruction car of a western railroad is the following motto: "An Ounce of Demonstration Is Worth a Ton of Argument." The moral brought out in this motto applies quite aptly to the excellent exhibits which the equipment manufacturers have assembled on the pier, track exhibits, and in the machinery and motor transport annexes. The opportunity afforded the members and guests attending the convention to examine the various kinds of machine tools, shop equipment, and new locomotive, car and automotive equipment is unexcelled. Being able so conveniently personally to examine the construction and method of operation is worth a great deal to a busy railroad officer. Successful operation depends to quite an extent on his knowledge of such equipment and devices. Demonstration is one of the principal objects of the exhibit.

Reducing Stocks of Materials

THE constant and tireless efforts that are being made to effect every possible economy in every branch of railroad operation are illustrated by the attention being given by purchases and stores officers to reducing the stocks carried to the practicable minimum. The General Committee of the Purchases and Stores Division in its report yesterday very properly emphasized the fact that comparisons between the stocks carried by different railways are sure to be highly misleading unless the widely different conditions under which the various roads operate are considered. It referred also to the further fact that there is a lack of uniformity in the practices of the roads in handling stores and in their methods of reporting them. It is highly desirable that a uniform method of accounting for stores be adopted. Even after this shall have been done it will be found that the rapidity with which different railways will turn over their stocks will vary, but under uniform accounting statistics regarding the rates of turnover would throw more light on the comparative efficiency of the purchases and stores departments of the various railways than do any statistics now available. The large reduction in the stocks carried by the Class I roads within recent years and the increase in the average rate at which they have been turning their stocks over show that the increased attention which has been given to the problem of reducing inventories has been producing gratifying results. The purchases and stores officers who have effected the increases in efficiency are, however, the first to concede that more can be accomplished. One thing that has done harm and evoked considerable dissent has been the promulgation by one of

the bureaus of the Interstate Commerce Commission of a formula indicating that the stock carried by each individual railway should approximate 10 per cent. of its annual operating expenses. There is, for reasons that the *Railway Age* mentioned in a recent editorial, no actual relationship between a railway's total operating expenses and the stocks of fuels and materials that it needs to carry, and the use of any such arbitrary formula confuses the situation and leads to unsound and unfair conclusions.

Rough Diamonds

AN APPRENTICE instructor recently compared a new apprentice in the mechanical department to a diamond just taken from the ground. "They are both of good quality and possibly without flaw, but they are both in the rough and worth but little until they have been worked into shape, have had the roughness taken off and are a finished product. All of which, if the apprentice is trained in the right manner, should fit him ultimately to take his highest station in life and be a valuable asset not only to his company, but also to himself, his family and the community in which he lives." Railroad executives are keenly aware of the vital necessity of making a favorable impression on the public. It is practically impossible to do this effectively if the railroad workers themselves are not loyal to the railroad and well informed about the road and its problems. The influence of the employees will naturally be measured not alone by their loyalty and enthusiasm, but by their personalities and their standing in the community. Mechanical department officers who have established up-to-date apprenticeship systems, insist that they are a paying proposition from a dollars and cents standpoint, based on shop operations. Even if this were not so, would it not mean much to a railroad if the training that the apprentices receive made them more valuable citizens? The very fact that they are better mechanics means something in this respect, but it is rather significant that apprentice supervisors and instructors in most cases regard it as a duty not only to turn out skilled mechanics, but also to help develop the characters of the young men under their charge in order that they may make the best of citizens and reflect credit upon the railroad. Has the time not come when this should be regarded as one of the distinct objectives of apprenticeship, rather than as a by-product?

Can Passenger Coaches Be Improved?

THERE is a railroad a little over 20 miles long doing business in an Eastern state with four second-hand locomotives, 45 second-hand freight cars and four second-hand passenger cars. The passenger cars were purchased about 15 years ago. How long they were in service previous to that it would be difficult to say, but 15 years would be a conservative guess. This will give us a period of 30 years of development in passenger car construction to consider in making a comparison between the kind of coaches which were new a generation ago and those which are modern today. These cars are not as long as modern steel passenger coaches and, of course, do not have as great seating capacity. But from the viewpoint of the average passenger who has changed cars at the junction from the all-steel cars of the big railroad to the wooden cars of the little railroad, there is very little difference to be noted. The old wooden cars do not have vestibules but the doors and aisles seem just as wide. The seats are upholstered in the same red plush and are built practically the same as those in the car he has just left. They can be reversed for a "four-handed game" just as easy as the seats in cars of modern construction. The toilet rooms are located in the same old places at both ends of the car, and are just as large. Of course, the cars are lighted with oil lamps but these cars do not run at night, so there is no need for electric lights. The stove has also been replaced by steam heat which has made room for another seat at the end of each car. A man who had the misfortune to become blind 30 years ago could be placed on the lower step of the average passenger coach of today, usher himself up the steps and down the aisle to a seat without the aid of a cane. After all, his picture of the interior of a passenger coach is not much different than that of those who can see the cars of today. Some railroads have begun to appreciate the need of providing improved facilities for their day coach passengers. A railroad in the northwest has recently converted a number of sleeping cars into day coaches, retaining the ladies' retiring room and the men's dressing and smoking room as additional facilities for the day coach passengers. The Baltimore & Ohio has recently placed day coaches equipped with individual seats in service on its line between New York and Washington. These examples show that there are actually possibilities for changes that will add to the comfort and convenience of coach passengers.

The Dangers of Standardization

IN yesterday's issue in these columns attention was called to the three principal reasons favorable to freight car standardization and to the different degrees of standardization, which each of these three reasons tends to justify. In any discussion of standardization attention should be directed at the outset to the fact that there can be no such thing as a complete and strict standardization of any facility based on the assumption that the ultimate development has been reached and no further possibility for improvement is likely to be opened up. Certainly such an assumption is far from justified in the case of railroad equipment. The evidences of this can be seen in locomotives on the exhibit tracks and the general development which these exhibits typify. While possibilities for development in many directions are of as great magnitude as those taking place in locomotives today, they are perhaps hardly to be anticipated in the case of freight cars. There are, however, still many features of freight car construction in which further improvements are desirable and in which, indeed, improvements are constantly being developed. These features are largely in the specialty class, but who can say but that the development of a new steel or, perhaps, a non-ferrous alloy, or, perhaps, again, a development in the application of materials which are in existence today, may not offer future possibilities, to take advantage of which it will be necessary to revise completely the present fundamental basis of car design? The danger of standardization does not lie in the degres of standardization required to satisfy the essentials of economical freight car maintenance in interchange, nor, indeed, in the type of standardization represented in the standard freight car design now adopted by the association or being developed by the Car Construction Committee. So long as these latter standards do not become so inflexible that proposed alterations cease to receive attention. There is real danger that future progress may be retarded if standard designs become so inflexible that proposed changes do not receive prompt and open minded consideration.

Today's Program

FOLLOWING are today's programs of the meetings of the Purchases and Stores and the Mechanical Divisions of the American Railway Association.

Purchases and Stores Division

The session will open 9.00 a. m., Daylight Saving Time, in the Vernon Room of the Haddon Hall Hotel.

9.00 a. m. Special Subject—"Carrying Cost of Material," by U. K. Hall, General Supervisor of Stores, Union Pacific System.
9.30 a. m. Subject 4—Provisions for Uniform Observance of General Balance Sheet Account 716—Materials and Supplies, and Recommendations Governing Charges to Material Stores Expenses, Paragraph 16—Special Instructions Operating Expenses.
10.15 a. m. Subject 14—General Accounting.
10.30 a. m. Subject 13—Stationery and Printing.
11.00 a. m. Address by Elisha Lee, Vice-President in charge of Operation, The Pennsylvania Railroad.
11.15 a. m. Special Subject—"Stationery," Mr. V. R. Plank, Stationery Storekeeper, Southern Pacific Company.
11.30 a. m. Subject 16—Standardization and Simplification Store Stock and Disposition of Material Reaching Obsolescence.
12.00 m. Subject 18—Uniform Methods Pertaining to Purchases of Equipment and Large Material Contracts, and Vital Statistics Relating Thereto.
12.30 p. m. Subject 3—Recovery, Repairs and Reclamation of Discarded Material—Classification, Handling and Sale of Scrap. (Illustrated by stereoptican views.)
1.00 p. m. Subject 6—Stores Department Buildings and Facilities for Handling Materials. (Illustrated by motion pictures.)
1.30 p. m. Adjournment.

Mechanical Division

The meeting will be held in the Greek Temple on the Million Dollar Pier. It will be called to order at 9.30 a.m. and will adjourn at 12.30 p. m., Daylight Saving Time.

Discussion of Reports on:
Arbitration Committee.
Committee on Prices for Labor and Materials.
Safety Appliances.
Specifications and Tests for Materials.
Loading Rules.

Entertainment

10.30 a. m. Orchestral Concert, Entrance Hall, Million Dollar Pier.
3.30 p. m. Orchestral Concert, Impromptu Dancing, Entrance Hall, Million Dollar Pier.
4.30 p. m. Tea will be served in Entrance Hall.
9.30 p. m. Grand Ball, Ball Room, Million Dollar Pier.

Motor Transport Meeting

THE meeting of railroad officers interested in motor bus and truck transportation problems and possibilities will be held in the Ohio Avenue Hall on the Blenheim side of the Marlborough-Blenheim at 10 a. m., tomorrow, Friday, June 11. All railroad officers who are interested in highway motor transport are invited to attend. Invitations to the meeting went out some time ago to about 200 railroads and a large number of acceptances have been received.

An interesting and comprehensive program has been arranged. It is intended to cover all the major questions regarding bus and truck operation through informal talks by officers having experience in such operation. Discussion of the points raised will be open to all. Attendance of the meeting will be limited to those within the railroad field.

Railway Club Secretaries Meet Today

THE Society of Railway Club Secretaries will hold a meeting at 10:00 a. m. this morning at the Marlborough-Blenheim. This will be followed by a round table luncheon of members, presidents of railroad clubs and invited guests, at one o'clock, in the Blenheim.

Registration Figures

WHEN the plans were first laid for this year's convention due allowance was made for an increase in attendance over last year, but the figures as compiled at 4:00 p. m. of the first day have far exceeded all expectations. At that time the total registration was 4,105. This is about 36 per cent more than the highest previous registration on the first day of the convention which was in 1924 and 305 per cent more than the lowest registration, which was in 1916.. The registration figures have been kept since 1911. It is further to be noted that the registration of members from Division V is greatly in excess of any previous convention. Below are comparative first day figures for 1920, 1922, 1924 and 1926:

Division V—Mechanical	355	360	435	600
Division VI—Purchases & Stores	9	13	8	330
Special guests	102	107	182	175
Railroad ladies	251	148	337	450
Supply men	1517	1140	1676	2050
Supply ladies	354	281	380	500
Totals	2588	2049	3018	4105

Additional Exhibits

TWO new exhibitors have been added since the Wednesday *Daily Railway Age* went to press, as follows:

Piston Ring Company, The, Muskegon, Mich.—Packing rings for steam, gas or oil engines from 1 in. to 84 in. in diameter. Represented by E. W. Cadman. Space 159.
National Development & Supply Company, Kansas City, Mo.—Pigg ball bearing car door hangers. Represented by J. D. Kuhn. Space "E".

Further additions are to be noted in the National Safety Appliance Company's exhibit at space 404, including an operating demonstration of the new Kelly-Sprague semi-automatic angle cock.

The Globe Railway Equipment Company is exhibiting at space 119 models of a Globe trackless door hanger and Cardwell spring track for replacing locomotive springs. This company is represented by W. L. Colton.

The Westinghouse Air Spring Company is exhibiting air springs at space 61 and is represented by John Holland and J. J. McElroy.

The Lymer Railway Equipment Company, Ltd., is exhibiting an automatic locomotive bell control and journal box for grease or oil, at space 164 and is represented by J. P. O'Reilly and A. Lymburner.

The Carbo-Oxygen Company was incorrectly reported exhibiting at space "D"; They are located at space 573.

Lost and Found

LOST—Badges Nos. 5342, 8676 and 102. Will the finder please return them to the enrollment booth at the entrance to the Pier.

Yesterday's Entertainment

YESTERDAY'S entertainment features consisted of an orchestral concert in Entrance Hall on the pier at 10:30 in the morning, impromptu dancing with tea in the afternoon, and an informal dance in the evening. At the evening's entertainment, under the direction of Miss Tulsa Lee, Joe Jackson "the bicycle tramp" performed. There were other specialties to please the large attendance. The evening's activities were in charge of a subcommittee consisting of L. J. McCombs, chairman; H. J. Downs, W. A. Hicks, P. G. O'Hara, H. A. Pastre, L. B. Rhodes, H. A. Varney, J. R. Wetherold and W. G. Krauser.

Life Members of Div. V

THE General Committee of the Mechanical Division, in its report, read yesterday, announced the names of 15 members who have been made life members during the year. Under the rules of order of the Division these men became life members because of a membership in the Mechanical Division or one of the two predecessor organizations of 20 years or over. The names of the new life members are as follows:

Date joined	Name	Title and railroad
1906	Appler, A. B.	Mech. Engr., Delaware & Hudson
1906	Burel, W. C.	M. M., Western Alegheny
1906	Bussing, G. H.	Gen. Supt., Mexico North Western
1906	Connors, Jas. J.	Chicago, Ill.
1906	Dunkle, S. K.	Supt., Benwood & Wheeling Connecting
1906	Edmonds, Geo. S.	S. M. P., Delaware & Hudson
1906	Flavin, J. T.	M. M., New York Central
1906	Gray, B. H.	S. M. P., Gulf, Mobile & Northern
1906	Gray, Guy M.	S. M. P., Bessemer & Lake Erie
1906	Helbig, O. H.	Vice-Pres., Prescott & Northwestern
1906	Hicks, I. C.	Mech. Supt., A., T. & S. F.
1906	Hoffman, C. M.	Dearborn Drug & Chemical Co.
1906	Pfahler, F. P.	Chicago, Ill.
1906	Smith, P. G.	Asst. to S. M. P., Maine Central
1906	Yohn, A. E.	Gen. Mgr., Huntingdon & Broad Top Mountain

In Memoriam

OF eight members of the Mechanical Division taken from the ranks by death during the past year, W. J. Tollerton, formerly general superintendent of motive power of the Rock Island Lines, was most prominent in the affairs of the Mechanical Division. Mr. Tollerton died on March 3 of intestinal influenza. Impressive funeral services, held at Chicago, were attended by relatives and a great number of personal friends, among the railroad men of all ranks, from all parts of the country. Mr. Tollerton was a commanding figure in physical stature and personal attainments in any gathering of railway men, and his presence at the convention this year will be sadly missed. He was a member of various committees of the American Railway Master Mechanics' Association from 1898 to 1916, becoming a vice-president in 1915, acting president in 1918 and chairman of the A. R. A. Mechanical Division from 1919 to 1921. In the year 1922, Mr. Tollerton served as delegate from the American Railway Association to the International Railway Congress at Rome, Italy, being assigned to read a paper before that congress on the subject of passenger train cars.

The list of members of the Mechanical Division who died since the last annual meeting, as contained in the report of the General Committee is as follows:

Name	Title and Railroad	Died
Bowman, Wm. W.	Auditor, Indianapolis Union	.....
Daley, J. H.	Mech. Supt., N. Y., N. H. & H.	Aug. 28, 1925
Davey, T. S.	Shop Supt., Erie	—, 1925
Ewing, J. J.	Engr. Tests, Chesapeake & Ohio	March 4, 1926
McFeatters, F. R.	Gen. Supt., Union	Oct. 25, 1925
Onderdonk, J. R.	Engr. Tests, Baltimore & Ohio	Nov. 7, 1925
Thomas, F. H.	Pres. and Gen. Mgr., Bellefonte Central	Feb. 26, 1926
Tollerton, W. J.	G. S. M. P., C. R. I. & P.	March 3, 1926

Committees were appointed to prepare obituaries for these deceased members to be included in the proceedings of the Mechanical Division.

Registration, American Railway Association

Division V—Mechanical

Aishton, R. H., Pres., A. R. A., Dennis
Allen, R., Asst. Eng. Bur. of Econ., Can. Nat., Marlborough
Allison, Maj. W. L., V. P., Am. Arch., Marlborough
Alquist, P., M. C. B., D. L. & W., Strand
Anderson, R. W., S. M. P., C. M. & St. P., Traymore
Andrews, G. B., Mech. Eng., C. & O., Ritz
Anaya, I. J., Asst. to S. M. P. and M., Nat. Ry. of Mex., Ambassador
Appler, A. Benjamin, Mech. Eng., D. & H., Strand
Ayers, A. R., Gen. Mgr., C. & St. L., Marlborough
Badgett, Paul, Asst. Gen. Car For., D. L. & W., Ambassador
Baldwin, G. C., M. M., N. Y. C. & St. L., Ritz
Ballantine, N. D., Asst. to Pres., S. A. L., Haddon Hall
Barba, C. E., M. E., B. & M., Dennis
Bawden, Wm., S. M. P. & E. Term. R. R. Assn., Princess
Bean, W. L., Mech. Mgr., N. Y. N. H. & H., Traymore
Beaumont, H. A., Gen. Car For., B. & O., Haddon Hall
Beaghen, Jr., Thomas, M. C. B., Mexican Pet. Assn., Traymore
Becherer, F. H., Supt. Car Dept., C. R. R. of N. J., Dennis
Benson, M. R., Div. M. M., M. C., Ritz
Berry, W. B., Div. M. M., St. L. & S. F., Mt. Vernon
Bishop, C. Geo., S. M. P., L. I., Chelsea
Bittler, E., Secy to Ch. Mech. Off., Mo. Pac., Ritz
Black, W. G., S. M. P., N. Y. C. & St. L., Haddon Hall
Blake, F. H., Insp., Penna., Craig Hall
Blue, J. N., M. M., Tex. & Pac., Haddon Hall
Boring, T. J., Genl. For., M. C. B., Penna., Haddon Hall
Boyer, Chas. E., Gen. Car. Insp., Penna., Runnymede
Brady, M. J., Div. S. K., C. of Ga., Ambassador
Breed, A. C., Insp., I. C. C., Knickerbocker
Breyer, J. S., M. M., N. O. & N. E., Iroquois
Brooks, C. E., Chief Motive Power, Can. Nat., Haddon Hall
Brooks, J. B., Supvr. Loco., C. & O., Iroquois
Brown, B. S., Asst. Eng., Penna., Seaside
Brossart, J. A., Supt. Shops, C. C. C. & St. L., Marlborough
Buckingham, C. L., Eng. Tests, M. K. T., Chalfonte
Budds, J. H., Gen. For., N. Y. C., Chalfonte
Burch, R. H., Gen. Car For., K. C. S., Ambassador
Butts, H. M., Gen. For., N. Y. C., Haddon Hall
Burel, W. C., M. M., West. All., Princess
Burton, T. I., A. B. Engr., N. Y. C., Marlborough
Butler, F. A., S. M. P., B. & A., Marlborough
Bussing, G. H., Gen. Supt., Mexico Northwestern, Haddon Hall
Cannon, T. E., G. S. M. P., P. & W. V., Tremont
Carceton, H. T., Asst. Eng. of Tests, B & O., Haddon Hall
Carroll, J. T., G. S. & M. P., B. & O., Traymore
Carson, G. E., Asst. M. C. B., N. Y. C., Dennis
Carter, Wm., Gen. For., B. & A., Pennhurst
Cartwright, Kenneth, Asst. Mech. Eng., N. Y. N. H. & H., Traymore
Case, Truman G., Genl. For., N. Y. C., Pennhurst
Chambers, J. A., Asst. M. E., N. Y. N. H. & H., Traymore
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Charlton, George J., Asst. Gen. Car For., L. V., Pennhurst
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Young, Paul B., Gen. For., Cornwall, Monticello
Zerbach, H. H., For. Car. Dept., A. C. L., Haddon Hall
Zweibel, C. A., Gen'l. For. Car Dept., L. & N., Haddon Hall

Division VI—Purchases and Stores

Adams, E. H., Str. For. A. C. & Y., Sterling
Adams, W. I., Genl. Matl. Supvr., Penna., Grand Palace
Ashton, R. H., Pres., A. R. A., Dennis
Alexander, G. W., Gen. St. Cen. of Ga., Ambassador
Anderson, H. A., Asst. P. A., Penna., Chelsea
Anderson, K. P., Gen. Mat. Supr., Penna., Chalfonte
Argyle, C. S., Dist. Stk., Can. Nat., Haddon Hall
Austin, Frank S., Gen. Stk., B. & S., Traymore
Babcock, A. T., Tie & Tim. Agt., W. M., Haddon Hall
Baile, M. E., Div. Str., Mo. Pac., Breakers
Baker, J. C., Trav. Stk., Southern, Breakers
Baldwin, Clinton D., P. A., Bangor & Amostook, Haddon Hall
Barrett, Arthur L., Stk. B. & M., Haddon Hall
Barron, C. M., G. P. A., Consol. Ry. of Cuba, Brighton
Beddoes, Walter, S. K., Penna., Knickerbocker
Bender, E. N., Gen P. A., Can. Pac., Haddon Hall
Bennett, Jos. J., P. A., I. C., Traymore
Bernheim, J. M., Str., F. E. C., Sterling
Blomquist, C. A. G., Stores Acct., C. of Ga., Chalfonte
Blood, L. F. A., G. B. & W., Princess
Bolinger, M. E., Lum. Agt., N. & W., Knickerbocker
Bolton, George H., Cl. Pur. Dept., B. & M., Haddon Hall
Bon, I. C., Supt. Scrap & Recl., Wab., Breakers
Bond, C. R., P. A., Swift Ref. Line, Marlborough
Bower, W. C., Mgr. Pur. & Sup., N. Y. C., Ambassador
Bowman, M. B., S. K., N. Y. C. & St. L., Knickerbocker
Breene, J. G., S. K., N. C. & St. L., Strand
Browne, O. L., Asst. to P. A., A. C. L., Haddon Hall
Bruckert, R. H., Stk., K. & Ind., T., Knickerbocker
Buckland, C. C., Gen. Matl. Supvr., N. Y., N. H. & H., Iroquois
Bussell, P. J., Sig. S. K., C. & O., Breakers
Buell, C. J., G. S. K., D. M. & N., Chelsea
Burr, H. S., Asst. Mgr. Stores, Erie, Strand
Burleigh, O. T., Trav. S. K., B. R. & P., Traymore
Bush, H. C., Gen. Lbr. Tie Insp., Erie, Strand
Buskey, S K., N. & W., Knickerbocker
Carnes, J. H., S. K., N. Y. C., Osborne
Carver, G. W., Asst. Sec., Treas. & P. A. N. Y. W. & B., Richmond
Chandler, J. E., Gen. Stk., D. & I. R., Haddon Hall
Chinn, K. P. Asst. C. Sk., So. Jac., Ambassador
Clarke, T. H., Tie & Tim. Agt., Southern, Malborough
Cleveland, F. P., Div. Str., L. V., Monticello
Cocke, Clyde, P. A., N. & W., Knickerbocker
Coleman, C. F., Sk., A. B. & A., Breakers
Cook, W. T., C. C. G. S. Dept., F. E. C., Sterling
Cooley, Le Roy, Genl. Sk., C. R. R. of N. J., Haddon Hall
Cooper, W. H., Div. S. K., Reading
Corbett, J. W., Pur. Agt. Cent. Reg., Can. Nat., Ritz
Cordean, A. R., Stk., Haddon Hall
Cornelius, Trav. Stk., Southern, Breakers
Cottrill, G. R., S. K., N. Y. C. & St. L., Knickerbocker
Crowley, M. D., Trav. Str., N. Y. N. H. & H., Continental
Culver, W. R., G. S. K., P. M., Ambassador
Curtis, D. C., Ch. P. A., C. M. & St. P., Traymore
Dale, A. R., Gen. Str., F. E. C., Sterling
Daniels, B. H., Str., Penna., Iroquois
Davis, Chas. I., Stk., D. L. & W., Craig Hall
Dawson, D. E., Asst. G. S. K., G. M. & N., Haddon Hall
Dawson, V. N., Dist. Str., B. & O., Marlyn
Devine, H. G., Asst. P. A., St. L. S. W., Chalfonte
Dewart, H. M., P. A., C. V., Strand
Dickerhoof, R. A., Gen. Matl. Supvr., Penna., Knickerbocker
Dickinson, T. R., Div. S. K., B. & L. E., Marlborough
Dittoe, W. P., P. A., N. Y. C. & St. L., Strand
Dods, J. C., G. Sk., K. C. T., Ritz
Doerr, Paul C., Ch. Cl., G. S. K., D. & H., Ambassador
Donagan, O A., Gen. Stk., B. & M. Haddon Hall
Downing, D., G. S. K., C. & W. I., Breakers
Driscoll, F. E., P. A., Erie, Ambassador
Dunbar, Alvin P., Stk., B. & M., Haddon Hall
Durboraw, A. H., Off. Mgr. Stores Dept., Penna.
Duvall, L. F., Ch. Ord. Clk., A. C. L., Knickerbocker
Ellenberger, E. G., Gen. Mat. Supvr., Penna.
Effinger, W. P., A. R. A., Insp., Erie
Elder, S. M., Lumber Agt., B. & O., Strand
Ernst, E. A., Dist. S. K., C. R. I. & P., Haddon Hall
Fechtig, F. H., P. A., A. C. L., Marlborough
Fisher, Omar D., Rept. Str., Penna., Haddon Hall
Fleck, H. L., Penna., Morton
Follette, A. G., Asst. Ch. Matl. Supvr., Penna., Chalfonte
Foley, John, Forester, Penna.
Fossick, Jr., J. L., P. A., T. C., Traymore
Friedlin, T. H., Chief Lbr. & Tie Insp., N. Y. C.
Fulmer, W. W., Gen. P. A., Am. Ry. Ex., Glaslyn-Chatham
Gage, A. M., Asst. Gen. Stk. Str., Mich. Cent., Traymore
Galleher, N. C., Asst. Gen. Str., M. K.—T., Ambassador
Galloway, W. S., G. P. A., B. & O., Strand
Gann, J. C. Insp. Str., M. & P., Breakers
Genther, J. S., Genl. Str., L. & N. E. Pennhurst
Gerber, J. W., Gen. Str., Southern, Shelburne
Gilbert, A. V. B., P. A., A. B. & A., Brighton
Goodloe, J. T., Div. Str., Southern, Shelburne
Gordon, W. B., Asst. G. Sk., Can. Natl., Chelsea
Gorsuch, J. W., Gen. Mat. Supvr., Penna.
Gowland S. I., Asst. Gen. Str., Penna., Silverside
Grabill, Shirley, Str., F. E. C., Sterling
Greenfield, Hugh, P. A., D. M. & N., Chelsea
Greer, G. H., Asst. to P. A., M. & O., Chalfonte
Griffith, B. W., Gen. Str., Mich. Cent., Traymore
Griswold, W. W., P. A., W. & L. E., Haddon Hall
Griswold, W. W., Stationer, C. R. I. & P., Strand
Gruss, T. A., S. K., N. Y. C. & St. L.
Guild, I. V., P. A., U. P., Shelburne
Hall, C. B., Genl. Str., Penna., Chalfonte
Hall, U. K., Gen. Sup. Str., Union Pacific System, Traymore
Hanlen, F. J., Str., Penna., Augustine Apt.
Hanna, J. L., Genl. Mtr. Supv., Penna., Ritz Carlton
Hargrave, William, Sec. to P. A., Penna., Apollo
Harte, E. P. G., Off. Mgr. Purchase, S. A. L., Haddon Hall
Hartzler, F. E., Div. S. K., C. R. I. & P.
Harris, R. C., Asst. to Stores Mgr., Penna., Chalfonte
Harris, Sydnor, G. S. K., R. F. & P., Haddon Hall
Hart, P. C., Div. Stk., N. Y. N. H. & H., Haddon Hall
Hayden, S. A., Acct. Gen. Str., M.-K.-T., Ambassador
Heidemreich, C. F., Dist. Stk., N. Y. C., Ritz-Carlton
Henderson, M. L., S. K., Penna., Haddon Hall
Herold, E. E., Stationer, B. & O., Strand
Hickey, R. W., Gen. S. K., D. & M., Strand
Hines, W. J., P. A., C. C. C. & St. L., Ritz
Hinkey, W. M., Supr. of Mtls., B. & O., New England
Hoffman, L. T., Trav. Str., U. P., Ambassador
Hogerty, E. D., Ch. Natl. Supvr., Penna., Chalfonte
Hopkins, W. A., G. P. A., Mo. Pac., Marlborough
Hubbard, C. H., Asst. Dist. Str., N. Y. C., Raleigh

Huff, F. E., Trav. S. K., N. & W., Knickerbocker
Hughes, E. H., G. S. K., K. C. S., Shelburne
Hughes, W. M., S. K., B. R. & P., Traymore
Hull, Frank A., Trav. S. K., N. Y. N. H. & H.
Hunter, P., Asst. P. A., Chicago, Ambassador
Illig, W. E., Stk., B. & A., Fredonia
Johnson, V. E., Trav. Str., D. L. & W., Osborne
Jones, G. R., Dist. Stk., N. Y. C., Fredonia
Jones, H. L., Dist. S. K., No. Pac., Haddon Hall
Jones, M. G., S. K., Penna., Fredonia
Jones, W. F., C. Sk., N. Y. C., Chalfonte
Keillor, S. E., Dist. S. K., Can. Nat., Haddon Hall
Kelly, C. H., Dist. Sk., L. V., Monticello
Kemmerling, B. B., Asst. Ch. Matl. Supvr., Penna., Chalfonte
Kenney, W. A., Trav. Stores Acct., D. L. & W.
King, D. C., P. A., Virginian, Strand
King, J. U., Asst. Gen. Str., A. C. L., Haddon Hall
King, W. E., Str., A. C. L., Chalfonte
Kinnear, F. H., Can. Nat., Chalfonte
Kirk, J. C., Asst. Gen. Stk., C. R. I. & P., Haddon Hall
Klapp, H., Asst. Dis. Str., New York Central, Raleigh
Knauer, W. R., Supv. Stores Catalogue, Penna.
Krumm, C. W., D. S. K., Mo. Pac., Breakers
Kyle, C. C., G. S. K., No. Pac., Haddon Hall
Lackey, A. B., Div. Stk., Southern, Breakers
Lacy, H. S., P. A., Jacksonville Term Co., Traymore
Lamneck, E. J., Sta. S. K., Penna., Breakers
Lance, I. H., Gen. Stk., D. L. & W., Chalfonte
Landerdale, J. H., G. P. A., G. C. L. & I. G. N., Traymore
Landers, E. H., G. Sk., C. C. C. & St. L., Traymore
Landis, J. D., P. A., P. & R.
Laret, A. N., Asst. to V. P., Frisco, Traymore
Lavoil, Louis, Gen. P. A., Can. Nat., Shelburne
Layton, J. L., Asst. Ch. Mtl. Insp., Penna., Barlton
Ledbetter, B. H., Div., Stk., N. O. & N. E., Breakers
Leith, H., S. K., N. Y. C. & St. L., Knickerbocker
Livingston, A. T., Stat. Str., N. Y. C.,
Liversidge, Robt. M., Ch. Cl. Pur. Dept., L. & N. E. R. R.
Lodholz, Edw. G., S. K., P. & R.
Lyons, E. H., D. S. K., C. M. & St. P., Haddon Hall
MacDonald, J. C., Dist. Sk., C. M. & St. P., Traymore
Marsh, E. S., G. S. K., W. & L. E., Haddon Hall
McAuliffe, J. W., Req. Maker, Penna., Schlitz
McCann, Thomas J., Stk., Reading, Alamac
McCanghan, J. C., G. Stk., H. V., Haddon Hall
McCrary, C. H., Div. Stk. B. & O., Princess
McDonald, N. J., Req. Marker Pur. Dept., Penna., Apollo
McGlothlin, J. H., G. SK., Virginian, Strand
McGrath, Frank, Trav. Stk., B. & M., Haddon Hall
McGuinnes, F. J., Div. S. K., D. & H., Knickerbocker
McKaig, W. J., Supvr. of Stores, L. V., Monticello
McKinnen, John J., Stk., B. & M., Haddon Hall
McMahon, F. J., Gen. Str., N. Y. C., Ritz Carlton
McNeal, B. D., Gen. Mat. Supv., Penna., Iroquois
McPherson, E. R., S. K., Can. Nat'l., Arlington
McQuilkin, H. P., Gen. Skp., B. & O., Haddon Hall
McTiche, T. F., Stk., L. & W., Haddon Hall
Mello, A. J., Gen. Str., Pac. Fruit Ex., Ambassador
Manion, S. R., S. K., Penna., Breakers
Merritt, W. H., Trav. Stk., B. & M., Haddon Hall
Mills, B. H., Str., N. Y. C., Osborne
Mills, O. B., Asst. G. S. K., Penna., Strand
Morris, Wm. H., Asst. Gen. S. K., P. & R.
Morris, W. W., Asst. P. A., Penna., Chelsea
Munster, A. W., P. A., B. & M., Chalfonte
Murphy, F. A., Dist. Str., B. & O., Shelburne
Murphy, J. D., Supply Train Sk., N. Y. C., Craig Hall
Murphy, J. D., Div. Str., Rock Island, Dennis
Murphy, J. P., Stores Asst. to Mgr. Pur. & Stores, N. Y. C., Traymore
Murrin, C. H., Spcl. Acct., I. C., Breakers
Nelson, B. F., Str., N. Y. C., Chalfonte
Nelson, O., G. S. K., U. P., Ambassador
Newman, F. C., Stk., Southern, Breakers
Nicodemus, E. H., Genl. Matl. Supvr., Penna., Chalfonte
O'Dea, J. T., Asst. to Pres. & P. A., Ritz
Oldenbuttel, H. V., Str., A. C. L., Haddon Hall
Ortner, J. L., Field Agent, Erie., Continental
Oswalt, W. L., Asst. Gen. Sk., Penna., Iroquois
Owen, A. E., Asst, P. A., Penna., Chalfonte
Pace, R. T., P. A., A. & W. P. R. R., Chalfonte
Pearce, C. J., Div. Sk., S. P., Haddon Hall
Pearce, C. W., Div. Stk., C. M. & St. P., Haddon Hall
Pearce, H. C., Dir. Purchases., C. & O., Haddon Hall
Peddle, C. R., Asst. P. A., Penna., Ritz
Peterson, Edwin W., Gen. Stk., Bangor & Aroostock, Haddon Hall
Phelps, W. G., Asst. P. A., Penna., Traymore
Polk, E. H., Dist. Str., S. P., Traymore
Porcher, Samuel, Gen. P. A., Penna., Chelsea
Porter, J. J., Signal Str., A. C. L., Haddon Hall
Portlock, W. H., G. S. K., S. A. L., Shelburne
Preston, C. F., G. S. K., C. V., Strand
Price, F. H., Genl. Str., N. Y. N. H. & H., Haddon Hall
Rainie, H. M., Asst to P. A., B. & M., Haddon Hall
Randolph, N. P., P. A., S. P., Ambassador
Rawson, W. E., Dist Sk., So. Pac., Ambassador
Ray, H. C., Reporting Stk., Penna., Fredonia
Reasor, C. K., Asst. Mgr. of Stores, Erie, Strand
Reed, D. H., Trav. Str. Southern, Shelburne
Rex, J. F., Div. Sk., U. P., Ambassador
Richards, G. T., Dist. Stk., C. M. & St. P., Fredonia
Ricks, T. J., Div. Stk., C. of Ga., Haddon Hall
Robinson, J. S., Str., A. C. L., Haddon Hall
Robinson, R. L., P. A. & Stk., Pgh. & W. Va., Brighton
Rock, D. E., Gen. Matl. Supvr., Penna., Chalfonte
Rodvers, C. I., Str., D. L. & W., Osborne
Rolston, H. W., Spec. Cl., Penna.
Royer, A. C., Buyer, Penna.
Ryan, T. H., Asst. P. A., Wabash, Ritz
Schenkel, J. T., Div. Acct., W. & L. E., Ambassador
Schuetz, Leonard, Genl. Matl. Supvr., Penna., Wellsboro
Schultz, F. W., Asst. S. K., Penna., Breakers
Schwanke, E. G., S. K., W. J. & S. S.
Scott, G. E., P. A., M.-K.-T., Traymore
Scull, A. W., Req. Marker Pur. Dept., Penna., Schlitz
Seim, J. H., Dist. Sk., N. Y. C., Ambassador
Shanks, H. G., Pur. Agt., L. & N., Dennis
Sheridan, C. H., Dist. Stk., N. Y. C., Haddon Hall

(Continued on Page 1574)

Conventionalities

George O. Hammond, formerly mechanical superintendent of the New York, New Haven & Hartford, is attending the convention this year as a representative of the American Brown Boveri Electric Corporation.

Much interest is being exhibited by stores officers in an exhibit which the Lehigh Valley stores department has placed in the convention room of Division VI at Haddon Hall. It consists of a large model material rack, which is so built as to show the various types of bins and trays developed on the Lehigh Valley for handling inside material. This road's unique method of subdividing bins is illustrated in the model, also the hinged type of bin for rosin and other loose materials, also the trays used for small material. Credit for this development is due to C. B. Tobey, general storekeeper, C. H. Kelly, district storekeeper, and W. J. McKaig, supervisor of stores.

L. P. Streeter, formerly air brake engineer, Illinois Central, is present at the convention for the first time since 1922, when he was then president of the Air Brake Association which met that year at Atlantic City. Although Mr. Streeter wears his A. R. A. convention badge where it can be seen, he displays even more conspicuously another pin proclaiming him as the one and only "Historian" of the Tuna Club, Santa Cataline Island, Calif., where he now spends much of his time. As there is considerable rivalry as to who can tell the biggest fish story, Mrs. Streeter also came on from the coast to tell how she could handle sword fish, when Mr. Streeter started tales of his catches of tuna.

Samuel Vauclain, who made the special address at the opening session of the Mechanical Division on Wednesday morning, experienced a day which to most of us would be unusual or impossible, but which to him seems more or less of a routine matter. The writer, for instance, recalls his first experience with Mr. Vauclain. On the day in question Mr. Vauclain was at his desk at the Baldwin Works in Philadelphia with the sunrise, kept an engagement in Washington, D. C., went on to a conference in Baltimore and then closed the day by making an important address in New York City. He seemed to think nothing of this strenuous manner of living. When he was asked to make the address at the Mechanical Division opening session this year, he replied that he was to have the degree of Doctor of Laws conferred upon him by Villanova College and that it would be physically impossible for him to speak at Atlantic City and get to Villanova in time for the commencement exercises. Chairman Wallis overcame this difficulty by making special arrangements to rush Mr. Vauclain from Atlantic City just as soon as he had completed his address; the 64-mile trip to Philadelphia was made in 63 minutes. John Purcell reports having met Mr. Vauclain at the Million Dollar Pier at 7:30 yesterday morning and that he looked over the exhibits with Mr. Vauclain before the Mechanical Division meeting opened. We have not been able to learn just how Dr. Vauclain spent the evening. Incidentally, this is not the first time that Mr. Vauclain, or Doctor Vauclain, as he was introduced yesterday, has had important degrees conferred upon him. Among a few of his special honors are the degree of doctor of engineering, received from the University of Pennsylvania several years ago; Chevalier of the Legion of Honor of France and the Order of Polanda Restituta, conferred upon him by the Polish government.

Fred W. Brazier, of the New York Central, was assigned to room 555 when he registered at the Marlborough. Imagine his surprise, when he registered at the enrollment booth on the Pier to find that his badge number was 555.

E. H. Gold and A. D. Bruce, of Chicago, are at the Ritz, having arrived for the conventions Tuesday morning. Mrs. Gold, who has many friends among the delegates, will not attend this year. Mr. Bruce, who has attended many of these conventions, but not in recent years, will enjoy renewing old-time friendships.

One of the new comers at the Atlantic City conventions this year is Robert J. Schlacks, of the Standard Stoker Company at New York. Mr. Schlacks formerly represented the Baldwin Locomotive Company in its Chicago office. Rumor has it that he is also new in the matrimonial field. Mrs. Schlacks, however, is not with him.

George F. Hess, superintendent of motive power of the Wabash, who is at present giving special attention to problems involved in the proposed substantial enlargement and improvement of the locomotive shops at Decatur, Ill., arrived on the "Special" from Chicago yesterday morning. Mr. Hess was accompanied by Mrs. Hess.

It's a long, long way from San Francisco to Atlantic City, but Herbert G. Cook has come to attend his first convention at the resort city. Mr. Cook was for many years with the Southern Pacific. He was general storekeeper at San Francisco for six years. He is now a member of the supply fraternity. Mrs. Cook is with him; they are guests at the Brighton.

C. E. Chambers, superintendent of motive power of the Central Railroad of New Jersey, is enthusiastic over the progress made by the two foremen's clubs on his road during the past year. These clubs, one at Elizabethport, N. J., and one at Ashley, Pa., recently held a joint celebration at the close of the season, listening to a program of inspiring addresses. Special music was furnished by employees of the road.

M. A. Kinney, superintendent of motive power of the Hocking Valley, stopped off on his way east to see Dave Redding, superintendent of motive power of the Pittsburgh & Lake Erie. Friends of Dave will be delighted to learn that he is recovering rapidly from his recent illness. Mr. Kinney reports that business is heavy on the Hocking Valley, particularly since the lake season has finally opened up.

Early arrivals on the special train from Chicago yesterday included C. C. Kyle, general storekeeper of the Northern Pacific, who comes to Atlantic City with Mrs. Kyle and Miss Irma Johnson, chief clerk of the superintendent, building department. Following the purchasing and stores convention, in which Mr. Kyle is active as a member of the general committee, they plan a trip through New England, returning to St. Paul July 1.

W. A. Pownall, mechanical engineer of the Wabash, was one of the arrivals on the second section of the "Special" yesterday from Chicago, being accompanied by Mrs. Pownall and daughter, Ruth. Mr. Pownall, in common with most mechanical engineers, has many "irons in the fire" at the same time. Not long ago he made a special study of the effect of various boiler feed waters on boiler maintenance and more recently investigated the merits of several types of train control. It will be recalled that last February he read a paper before the American Society of Mechanical Engineers, Chicago section, describing the results of operating tests of the three-cylinder locomotives owned by the Wabash.

W. J. Miller, superintendent motive power of the St. Louis-Southwestern, with headquarters at Pine Bluff, Ark., will be unable to attend the convention this year owing to the illness of Mrs. Miller.

A. H. Fetters, mechanical engineer of the Union Pacific, who arrived Monday, has been joined by Mrs. Fetters and their son, Jack, who has just completed his junior year in mechanical engineering at Cornell University. Jack and Mrs. Fetters drove down from Ithaca yesterday.

C. L. Mellor, vice-president of the Barco Manufacturing Company, drove through from Chicago to Baltimore, 805 miles in 27½ driving hours. Mrs. Mellor accompanied him but is in New York for a few days visiting friends and will arrive at the convention the last of the week. F. N. Bard, president, who has just returned from a trip to the Pacific Coast, will not be with us this year.

Disaster threatened the motor transport exhibit early yesterday morning when a faulty electric light connection short circuited. Fortunately a number of representatives of manufacturers were in the tent at the time preparing their buses and trucks for the show, and the small blaze from the short circuit was extinguished before any damage was done.

Stanley W. Midgely, of Midgely & Borrowdale, is proud of his complete set of Supply Men's badges starting with 1903, when he attended the convention at Saratoga as a representative of the National Car Coupler Co. In 1903 Mrs. Midgely also attended—in fact they were bride and groom. Mrs. Midgely has attended many times since and her badges are shown with her husband's. She is unable to be here this year.

J. H. Gimpel, assistant superintendent of the car department of the Wabash, is accompanied at the convention this year, as for a number of years past, by Mrs. Gimpel and daughters, Bertha and Antoinette. They are stopping at the Brighton. Mr. Gimpel is proud, and justly so, of the new steel car shop recently completed under his direction at Decatur, Ill., as described on page 349 of the June *Railway Mechanical Engineer*.

R. A. Dennis, special representative of the railroad department of the Remington Typewriter Company, who is attending the conventions, is known to many of the visitors as a former railroad man. He was private secretary to B. L. Winchell when Mr. Winchell was president of the Rock Island. Mr. Winchell was later regional director of the United States Railroad Administration at Atlanta, where Mr. Dennis was associated with him and after Mr. Winchell became president of the Remington Typewriter Company, Mr. Dennis went with that company. Mr. and Mrs. Winchell attended the conventions two years ago, but will not be here this year.

A. P. Wells, engineer of tests of the Central of Georgia, announces that the first five Central of Georgia—Georgia Tech co-operative students were graduated last week. These students have completed five years of work, alternating one month in the university and one month in the Central of Georgia Railway shops, and are the first railway co-operative students to be graduated from Georgia Tech. President Downs of the Central of Georgia is very much interested in this development and in cap and gown personally delivered the diplomas to the five students at the commencement exercises. Mr. Wells has charge of all of the co-operative students in the employ of the Central of George and is now interested in so placing the five graduates that they can utilize their splendid training to the best advantage of both themselves and the railroad. This development is unique from the standpoint of the mechanical department and its final results will be watched with much interest.

Members of the General Committee of Division V—A. R. A.—Mechanical

L. K. Sillcox
Vice-Chairman

J. T. Wallis
Chairman

V. R. Hawthorne
Secretary

Officers of Division V—Mechanical

Mechanical Division, A. R. A., Meets

Convention opened with addresses by S. M. Vauclain, R. H. Aishton and Chairman Wallis, and Shops and Engine Terminals Report

THE seventh annual meeting of the American Railway Association, Division V-Mechanical, opened in the Greek Temple on the Million Dollar Pier at Atlantic City, N. J., at 9:30 yesterday morning. The meeting was called to order by J. T. Wallis, chairman of the division and chief of motive power of the Pennsylvania. Reverend Alfonso Dare, of St. Paul's Methodist Episcopal Church, Atlantic City, delivered the invocation. This was followed by an address by Doctor Samuel M. Vauclain, president of the Baldwin Locomotive Works.

Conditions in Europe and America Compared by Doctor Vauclain

It is a great pleasure and a great privilege to look over this assemblage and it reminds me of the days gone by, when my hair was not as white as it is; of my advent into this association. It was at the twenty-fourth annual meeting, in 1891, at Cape May, that I first undertook to participate in debates on matters before the convention.

Those were great days. The Master Mechanics' Association was an association by itself and its members were men who had risen from the ranks, almost entirely so, and they were real characters. They were the pioneers in the railway business, so far as the mechanical end is concerned, and their strong, sturdy, determined characters are the reason why we stand pre-eminently ahead in the railroad business of any other nation in the world.

These men were not college graduates. They did not have the advantages that many of you gentlemen present here have enjoyed, but they attended the world's college and dug their opinions and their knowledge and their superior education out of the hard facts with which they had to come in contact every day.

We have a few stalwart characters here amongst us who struggled in the days of their youth, in order to promote the locomotive science, which is the key of all transportation, because you can't haul cars unless you have some kind of a locomotive. We had all kinds of locomotives those days, just as we have all kinds of locomotives today. But the locomotives of today are so far superior to the locomotives that we had 35 years ago, that there is a complete justification of the existence of this association, because in my judgment the Master Mechanics' Association has had more to do with the advance in the science of locomotive building in this country, than any other agency, I care not what the educational institution may be.

I have just returned from abroad. I have visited many countries and many locomotive workshops. I have ridden on many locomotives, on many lines, and have examined into the condition of the motive power, and car equipment. Wherever locomotives are operated abroad they operate very sweetly. You seldom hear a clanking rod on these locomotives, but they are mere whispers as compared to the locomotives you are operating in this country. They are locomotives, of course, but they would be entirely useless so far as the transportation requirements of this country are concerned.

Europe, Like America, Interested in Internal Combustion Motive Power

They, however, are like we are in this country at the present time. We are looking for something greatly in

advance of what we are using, something that will be attractive to our railways so that a new business may be created, so that the old will be discarded for the better equipment we will have in the future.

In every locomotive-building shop that I visited, I found it busy, spending good money building some particular claptrap with which they expected to captivate railroad managers: all sorts of turbo-locomotives, turbo-electric locomotives, turbo-direct drive locomotives. Then they had all sorts of gas locomotives, direct-drive gas-electrics, magnetic clutch locomotives, and the ordinary gas-electrics.

In every country I visited I found that they were in the same condition, or probably a worse condition than we are in this country, because we have built some fairly successful gas-electric locomotives.

The Baldwin Locomotive Works, with which I am connected, has built one gas-electric locomotive of a thousand horsepower, but we are not ready to sell it to anybody, because I do not think we would want to buy it ourselves just now. We wish to have it a little better and therefore we will keep on. Ultimately we may be successful.

I found that the condition of everybody abroad was that they were almost all right, but not quite all right, and they were looking for something else.

I found, too, that they face the same condition which we face in this country, namely, whether what we may produce to attract the attention of railway managers will be a commercial possibility. To be successful, an invention must be such a one as can be considered commercially by those who are going to use it. An extravagant price for anything that is going to replace the present steam locomotive is absolutely out of the question.

In Russia, however, I rode upon a very successful gas-electric locomotive, designed and built in Germany by Professor Lomonosoff, who during war times was here in charge of the Russian equipment until he was run out of the country for changing his politics and joining the Soviet. This locomotive is operating on the Moscow-Kirsh line, and is doing successful work. It has been necessary to build an additional refrigerator to attach to the rear of the engine to keep the Diesel engines cool, which, of course, could not be tolerated over here. The locomotive, however, belongs to the government, and the government can do anything to make it successful.

I was very much amused that they hauled a hotel car along with this engine because the crews are not supposed to work over eight hours a day, and running the locomotive through 500 versts, it is necessary to have two extra crews along, who eat and sleep in this car. I doubt if that would appeal to many of our American railway managers, especially for a machine of only 1,000 hp.

Russia, however, in my judgment, has done more and is further ahead with this proposition than are we, or any other country. They built them themselves, and they are operating them successfully and satisfactorily, so far as the machine itself is concerned, but I do not think so far as the expense is concerned.

Russia Interested in Vertical Plane Couplers

Mr. Ritzatach, who is Minister of Railroads, told me it was his chief ambition to change all the cars in Russia to use the Master Car Builders' coupler, and before he could do that he wanted some American concern to come into Russia and manufacture these couplers. Well, now, you know how much chance there is for that until the Russian government changes its attitude and recognizes property rights, and is willing to restore to all American citizens all the legal property which they possessed in Russia prior to the revolution. It must also do something that will lead every American citizen to understand that no further communistic propaganda will be advanced in this country in any way, either directly by the Russian government or by the Internationale, which has its headquarters in Petrograd. Therefore, Russia will have to wait until she changes her mind. Russia will progress, in my judgment, and that very quickly.

One reason why this famine of industry prevails throughout all countries of Europe is that all the military operations have ceased. The millions of people who were employed in the manufacture of war machinery of all kinds are out of work, and there is not sufficient commercial activities there in their own country, or in the countries which they adjoin to give these people employment. Therefore, not until the wall is torn down and the great country of Russia is opened up to western Europe, will their troubles and their poverty come to an end.

American Prosperity Due to Transportation

Here in our country, what do we see? We see the greatest prosperity that any country has ever enjoyed. We see a nation, built upon a solid foundation, a foundation built by its own people. We are a very autocratic government here. It is autocratic because it is government of the people. The people make their own laws, and then the people compel themselves to obey those laws. There is an autocracy that is apparent wherever you go in the humblest walks of life, or in the highest planes, which we enjoy in our present civilization.

This present prosperity is due to what? It is due to the tireless energy of the transportation people of this country that has made it possible for the people of a great nation of more than one hundred millions of people to communicate with each other, to have business relations with each other in an almost unbelievably short space of time.

We are all as though we lived on one lot, notwithstanding that this lot is 3,000 miles wide. No one thinks of distance. No one thinks of difficulties so far as they relate to the transportation of goods or of people.

This transportation of the railways has incited additional transportation facilities. The gasoline man has come along with his automobile.

The automobile is used, I might say, almost exclusively in the United States. Nearly 90 per cent of all the automobiles in the world are used in the United States. Almost every workman of every consequence has his flivver. And it is a God's blessing that he has this flivver, because his mind is on that and it is not on something that might give you or his employer trouble. One flivver in a man's family is enough to keep not only himself busy, but his entire family busy, in all the idle time that he may have. You must have something to keep the people employed, and therefore let it be a useful thing; let it be something that will change the radius of life in which he and his family live. The railways have changed the radius of life, so far as he can afford to pay railroad fares and Pullman accommodations, but the flivver has increased the radius of life of the ordinary individual because with a few quarts of gasoline he can go wherever he pleases.

Automobile buses are the next thing that have come along. People have said, "Why, these buses are going to drive the railroads out of business." Gentlemen, don't worry about the automobile buses. It is going to drive you into business. In another ten years, the railroads will hardly know, unless they increase their facilities very much, how to handle this tremendous business that will be built up by the cross lines operated by automobile buses, automobile trucks, everything that can run anywhere without a rail, no matter what it costs.

The American people don't care for the cost at all; what they want is to be on wheels. If it is not on car wheels or locomotive wheels, it can be bus wheels or automobile wheels.

Now, it is for the young man in this convention, and the

other men, members of it as long as I have been, to put their minds to work, not to find fault with those things which apparently are coming in to drive them out of business, but to embrace those things, enter into them, get the best out of them, apply them to the benefit of the principal business in which they are engaged, namely, railway transportation. We are not going to go out of the railroad business. We are not going to go out of the locomotive business. I expect that during the next 30 years of my administration of the Baldwin Locomotive Works, that we will have accomplished wonders and that the present locomotives, which we have on exhibit here today, and which represent, along with others exhibited by our friends, who are in the locomotive business elsewhere, that which is the highest state of the art, will be a thing of the past before another ten years. And it will be you who will make it so. You will be the cause of it. This association will have much to do with it because these things will be discussed here.

Don't worry about the future and do not have any regrets of the past. The man who thinks about what happened yesterday is not fit to tackle the problems of tomorrow. So what has passed, let it be passed. What have we today? What are we going to have tomorrow? And every day should bring to us something better. There should be something worth having. There should be something to keep a man busy and keep him at work.

I read in a newspaper yesterday that Joe Cannon was 90 years of age and went to his office every morning. The reason he is 90 years of age is that he always went to his office every morning. Now, just keep on going to your duties. Keep on with your occupations. Don't get tired of them. Don't get discouraged. Don't become disgruntled. Don't find fault with your superiors because sooner or later you will be a superior and then you will find out what it is to have somebody find fault with you.

Encourage your superiors. Do not hesitate to do anything they want you to do and do a little bit on your own hook at the same time. That will attract attention. That will cause you to keep stepping up. And you will find that the higher you step the more difficult it will be to retain your position.

Don't look backwards or you will get dizzy. Look forward. That is the only hope for the American people, to keep progressing. Don't worry about the people on the other side of the water. Let them take care of themselves. They are able to do it. They have been at it for centuries and we have been at it for one.

Let us go ahead and develop our own country. Let us develop our own facilities. Let us introduce the human idea into the work that we do. Let us take care of the man who has to work eight or ten hours every day or probably sixteen, the man at low wage. Let us do everything we can to increase his wage; make it higher. Give him more opportunity to enjoy life, so that he can provide greater privileges for his own family, but, at the same time, by your own ingenuity, by the development of mechanical devices, reduce the cost of production so that we can all enjoy that which we have to deal with here in this great United States.

Address by R. H. Aishton

It is always a pleasure for me to meet with the Mechanical Division. As your Chairman well said in his introduction, pressure on the mechanical officers of the railways to do their best has been increasingly stronger as the years go by. The demands for better and more adequate service, and particularly for more economical operation, have not let up for a minute in the past six years, and for the comfort and encouragement of you men of the Mechanical Division—without any predictions or without any attempt to prophesy—I can predict confidently to you that this pressure will continue and will be accentuated in the many years that lie before you. The answer to it lies in the results that have been attained in the past few years, which may be epitomized in the term "Public Relations."

You know what the relations were with the public back in 1920; you know what the problem was that faced the railroads, and you know how much courage it took for the railway executives of this country facing those conditions to enter into a program of capital expenditures, amounting to over four billion dollars in the past six years, for increasing their capacity and facilities to do what was necessary to provide adequate transportation. That the wisdom of their courageous action has been demonstrated in the fact that in the last three years at no time has any question arisen in this country as to the adequacy of the transportation.

Furthermore, on parallel lines with that, the ability of you mechanical officers to pull yourselves up by your own bootstraps, in other words, to get more efficient operation out of what you had—has contributed in no small measure towards the result of providing adequate transportation. It has also had a marked effect in the economies with which that transportation has been produced, until today the railroads are quoted by those in authority, and stand in the general estimtion of the public, as being in the forefront of industry, not only as to the public service afforded, but also as to being alive to every method productive of efficiency and economy in transportation.

Has this been worth while? I say it has! But what is more important, the public says it has!

Your chairman referred to me as being the contact officer between you and your critics. I am not however, the contact officer between you and your critics. If there are any critics, and the Lord knows there aren't as many as there were a few years ago, and those that are left are largely critical for a selfish purpose, ofttimes political, the thing that stands between you and them is the public relations existing between the carriers and the public. You have been doing a great work, as have all the other railroad people, in helping to establish proper public relationship.

Now what is public relations work? As I see it, "it's everything the railways say or do not say, do or do not do" that will affect public sentiment toward them. What are the things that appeal to public opinion? First, the character of service the public gets: this has been of such a nature that there is general public satisfaction with it. Second, that every possible economy be attempted in producing transportation.

In both these lines your division has done and is doing a great work. Take the matter of standardization of box car design. Owing to refinements in design, these cars are of considerably lighter weight than many 80,000-lb. capacity cars designed and built a few years ago, including the United States Railroad Administration design, being as much as 3,000 lb. lighter than the 80,000-lb. car built by some railroads five and six years ago, but of equal or greater strength. Just see what this means to the public in the avoidance of hauling a ton and a half dead weight with every car moved over these railways.

Then let us consider the carrying capacity of the cars. The modern A. R. A. Standard 100,000-lb. capacity box car weighs approximately 13 per cent more than the steel underframe 60,000-lb. capacity box car of 30 years ago, but it has a carrying capacity permitting a revenue load of

approximately 94 per cent greater. In addition to that the modern car has cubical capacity to take care of light, bulky freight of from 35 to 78 per cent greater than the standard box car of 30 years ago.

How many of the public know this or appreciate just what it means? How many of the public know just what you are doing in the matter of specifications and tests for materials; of the money and time that is being spent on the investigation of power brakes by the railroads; of the work and money that you are spending on testing draft gears? Why this effort? Why the time thus spent? Why the expenditure of so much money? The answer to all of these questions is, "In order that economies may be secured and that service to the public may be improved."

As old railway problems are disposed of new ones will always come to the fore. We hear a great deal of discussion nowadays about the transportation of the future and about the relationship of waterways, motor bus, motor truck and even the airplane as transportation agencies. The answer to all these transportation problems, and the future of the railways lies in the adequacy of the transportation afforded and the satisfaction of the public with such transportation. Such satisfaction can best be secured, in my opinion, by a recognition on the part of all these various factors of transportation as to the benefits to be secured to all of them through the greatest cooperative movement possible, and a recognition by each of the advantages of the others. Furthermore, it lies in the inherent and continuing disposition to keep pulling yourselves up by your boot straps; in other words, to get a greater efficiency and a greater economy continually and all the time so that this of itself will provide the answer to all these questions.

Address of Chairman Wallis

J. T. Wallis

In an Association like ours it is but natural that our president, Mr. Aishton, should speak to us of the requirements of the railroads in a broad sense and what should be the contribution of our division.

It is also our custom to select each year as the speaker of the day a person who, while having more or less intimate knowledge of railways, views us and our activities in a more or less detached way and who is not actively engaged in directly controlling our operating and engineering problems and who probably for that reason can see at least some of our problems in a clearer light than we do. I believe Mr. Vauclain, as our Committee on Tests would say, satisfies that specification fully. You have heard from Mr. Aishton and Mr. Vauclain. There is little left for your chairman to say but to recite the activities of the Association since your last meeting and to give you his best judgment as to the subjects which should be pursued in the year which will follow after he has resigned the chair to his successor.

You will recollect that at the time of your meeting last year when, in accordance with the rules of the division, I became chairman, I was not in this country. This is the first opportunity I have had to thank you for the honor conferred upon me and to express my appreciation of the appointment.

About the time you were in session last year I was attending the meetings of that great association of railwaymen, The International Railway Congress. I do not intend to criticise the activities of that Association because it would be impossible for me to make a constructive criticism. Men of many countries with different forms of government all speaking different languages have difficulty in agreeing on details as distinguished from fundamentals. As in the case of our parent body, the American Railway Association, the action of the body is not compulsory on its members.

Later when I traveled over England and France and saw the multiplicity of design of equipment like journal boxes, brasses, etc., when we have but one pattern, I realized the priceless thing the famous old Master Car Builders' Association did when they framed our interchange agreement and made standardization in essential things compulsory. Our older members, like the framers of the Constitution of the United States either wrought better than they knew or were very wise men and it is my pleasure to think it was the latter.

There is no other place in the world where there are 2,500,000 freight cars, the largest freight cars in the world, owned by as many corporations as comprise the railways of this Country, moving under one agreement which provides for essential standards and is substantially a contrast enforceable in the courts. We owe that constructive piece of work to the M. C. B. Association.

To our members who concern themselves chiefly with locomotives and were members of the old American Railway Master Mechanics' Association, I want to tell what struck me most forcibly about their affairs. It was what we accomplish on account of the size of and the way we handle our locomotives.

The railway rates are higher in England than they are in this country. The total earnings of the four English systems are approximately 900 million dollars a year. It just so happens that the earnings of the Pennsylvania are about one-tenth of the earnings of all the railroads in this country, or approximately 700 million dollars. I believe the earnings of the Pennsylvania would be as high as 900 million dollars a year if our rates were as high as the rates in England. The Pennsylvania—which in this respect is not any better operated than any other carrier, earns this money with approximately 7000 locomotives while there are about 24,000 on the English railways.

The foregoing is not said in the spirit of criticism of English railways. I am not one of those who think English railways should adopt all our methods and use our equipment. I have seen enough to make me believe that is not possible and at any rate I would not want to express a fixed opinion on that broad subject after only a flying visit. The statement I have made, however, is a fact and indicates in a rather spectacular way the energetic manner in which our locomotive designers and operators have met our long haul and tremendous traffic.

Going back to the business for which we are meeting, the work of the Mechanical Division has proceeded in a quiet orderly way and a great deal has been accomplished. It seems to me that there has been a greater willingness on the part of the members of the various committees to compromise their individual views in the interest of the railroads as a whole than ever before and, that we may expect much progressive work and accomplishment by reason of this fact.

The foregoing is best exhibited by the work of the Car Construction Committee. I do not believe that there

is any association of railway men in the world representing half the miles represented by this association that either could or would have been willing to eliminate their personal views to the extent necessary to adopt a standard car in the interest of the body as a whole.

In the year to come I hope that we will be able to settle in a more or less fundamental way what, if any, modification in the characteristics of brakes we should make as compared with those we are now recommending; that something fundamental will be developed in connection with draft gears which will eliminate at least a portion of the doubt and discussion which has taken place on this subject and that we will extend our present rules in regard to the standardization of box cars to cover other cars.

To the Railway Supply Manufacturers' Association I wish to say that they seem to have out-done themselves this year in the excellence and extent of their display. I wish to thank them in the name of the Mechanical Division for their great interest in this matter.

The meeting will now adjourn for a few minutes to permit the Ladies and those who are not interested in the technical discussion which will follow, to retire.

Report of General Committee

The General Committee respectfully submits the following report:

Since the last annual meeting, the General Committee has held meetings on the following dates: October 13, 1925; April 7, 1926, and June 8, 1926.

The membership of the Division at the present time includes 207 railways, representing 398 memberships in the American Railway Association, and, in addition thereto, 203 railroads, associate members of the American Railway Association. These railroads, members and associate members of the American Railway Association, have appointed 1,095 representatives in the Mechanical Division. In addition there are 1,031 affiliated members and 154 life members in the division.

The last session of the division was held June 15, 16 and 17, 1925. Since that time, the General Committee has taken action on several important subjects. This action is outlined in the following report, and your approval is respectfully requested.

Manual of Standard and Recommended Practice

Account of the delay in some of the letter ballots last year and the resubmission of several recommendations, the revision of the Manual has been delayed. In view of the recommendations which will be submitted to ballot in such a short time, no revised pages will be issued to the Manual until after the 1926 ballots, which will be sent out immediately after the annual meeting. It is expected that the Manual revision for 1925 and 1926 will be ready about October 1, 1926.

Settlement for Rebuilt Cars

At the meeting of the board of directors held on December 21, 1925, there was presented a resolution adopted by the Executive Committee of the Association of Railway Executives at a meeting held on December 2, 1925, relative to this subject, requesting the American Railway Association through its board of directors to give further attention to the "question of an amendment of Rule 112 with a view to final determination in accordance with the regular procedure followed in such cases."

At the meeting of the board on December 21, the president was requested to submit to the members of the association for a vote by letter ballot the report of the special committee dated August 6, 1924, which report was rendered in response to the resolution of the association on May 15, 1924, reading as follows:

> "RESOLVED, That the committee be instructed to bring in a rebuilt car rule that with reference to the future follows the best engineering practice and with regard to the past considers the equitable questions involved."

The report of the special committee, however, was based on the car owner's investment account under the I. C. C. rules in effect prior to August 1, 1925, and could not be applied under the present accounting rules of the commission which do not recognize a rebuilt car. If the rebuilt car is to be considered for settlement purposes between the car owners the report of the special committee would have to be revised. There was therefore submitted to the Association for a vote by letter ballot the following:

> "In view of the action taken by the Interstate Commerce Commission, eliminating the rebuilt car from the owner's investment account, should there be any recognition of the rebuilt car for settlement purposes under Interchange Rule 112?"

In submitting this ballot, it was stated that the Rule of the Association would govern, viz., that the proposition would be considered adopted if approved by a majority of the members, that majority to represent two-thirds of the freight cars owned or controlled.

The first paragraph of this ballot also stated that freight car Rule 112 now provides and will continue to provide until changed, that when a foreign car is destroyed settlement should be on the basis of reproduction value in accordance with the price per pound shown in this rule depreciated from the date car was originally built.

The vote on the above letter ballot as announced by the secretary under date of February 2, 1926, was as follows:

Yes	127 memberships	representing	697,066 cars
No	171 memberships	representing	1,516,095 cars
Not voting	111 memberships	representing	378,719 cars

It will be noted that the majority of the membership representing two-thirds of the freight cars owned or controlled by the membership of the association have not signified their desire that Rule 112 of the Interchange Rules be modified to provide for recognition of the rebuilt car for settlement purposes.

In addition to the above, under date of January 7, 1926, the Bangor & Aroostook filed complaint before the Interstate Commerce Commission, I. C. C. Docket 17849, averring that the rules for compensation to be paid and settlement to be made for the use of cars destroyed on the line of a railroad not owning such destroyed cars, and the interpretations of said rules (as adopted by the American Railway Association and the defendants named), in respect of compensation to be paid and settlements to be made for the use of cars destroyed on the line of a railroad not the owner of same are unjust, unreasonable, arbitrary, and in violation of Section I of the act to regulate commerce.

In view of the failure of the letter ballot vote to change the present rule, the association is free to protect this rule just as it would any other of its rules. Therefore, by direction of the president, Alfred P. Thom, general counsel, is filing an answer with the Interstate Commerce Commission, questioning the jurisdiction of the commission, as to its control under the law, of question of compensation for cars destroyed, including rebuilt cars, and denying in general terms and demanding further proof of the allegations and averments contained in the Bangor & Aroostook complaint.

In addition, the General Counsel of the association has appointed the following committee to take charge of this matter for the association: Henry Wolf Bikle (chairman), general attorney, Pennsylvania; Clyde Brown, general solicitor, New York Central, and F. E. Andrews, commerce attorney, Atchison, Topeka & Santa Fe.

The following technical committees have also been appointed by the Mechanical Division (representing the Arbitration Committee and Special Committee on Rebuilt Cars) to assist the committee of counsel in the handling of this subject: R. L. Kleine, Pennsylvania; L. P. Sillcox Chicago, Milwaukee & St. Paul, and H. L. Shipman, Atchison, Topeka & Santa Fe. The following were appointed by the Railway Accounting Officers' Association: E. M. Thomas, Chesapeake & Ohio; J. J. Ekin, Baltimore & Ohio, and C. E. Hildum, Lehigh Valley.

Revision of Car Service Rule 14 (e) and Interchange Rule 2 (h)

The committee considered jointly with representatives of the Mechanical Division the difficulties that have been encountered in the application of Car Service Rule 14, Paragraph (e), and Interchange Rule 2, Section (h), which provide that the road on which the shipment originated shall pay cost of readjusting of shifted load caused by omission of proper inside door protection and for the application of such protection. While correct in principle, these rules have been difficult of application, due very largely to the prevailing differences of opinion as to commodities which should be provided with inside door protection and the absence of detailed rules or specifications governing the loading of commodities not requiring inside door protection. The Loading Rules committee of the Mechanical Division, assisted

by representatives of the Transportation and Traffic Divisions, will undertake to prepare a report showing a list of commodities which require inside door protection and to formulate rules and specifications for loading, with illustrations, of commodities not requiring inside door protection. Pending the compilation of such report by the Mechanical Division, the committee recommended that Car Service Rule 14 (e) and Interchange Rule 2 (h) be suspended and the rules they superseded restored as follows:

(Car Service Rule 14 (e) provides that the road originating the shipment shall pay the cost of readjusting a shifted load caused by omission of proper inside door protection and for the application of such protection. Section (h) of Interchange Rule (2) provides appropriate means of carrying out the car service rule.)

In accordance with this recommendation, the proposed changes in the above rules were submitted to the membership of the association for a vote by letter ballot in Circular No. 2590.

The vote on the above proposition was announced by the Secretary in Circular No. 2596, dated March 31, 1926, and was as follows:

Yes	321	memberships representing	2,290,785 cars
No	3	memberships representing	28,123 cars
Not voting	85	memberships representing	258,893 cars

Standardization of Machine Pins and Plain and Lock Washers

Your committee has accepted an invitation from the American Society of Mechanical Engineers to be represented on the committees to undertake the standardization of straight, taper, split and dowel pins and plain and lock washers. A. H. Fetters, mechanical engineer, Union Pacific, and H. A. Hoke, assistant mechanical engineer, Pennsylvania, have been appointed to represent the Mechanical Division on these two committees.

Standard Box Cars—Williams Patent or Side Plate Design

Upon recommendation from your committee, the association acquired the rights covered by U. S. Patent No. 1,237,434, granted August 1, 1917, to William Erastus Williams, covering certain features of car design incorporated in the standard box cars adopted by the Association.

Investigation by N. S. C. of Hazards In Paint Spraying

Your committee has appointed C. E. Chambers, superintendent of motive power and equipment, Central Railroad of New Jersey, to represent the Mechanical Division on the Spray Coating Steering Committee in the investigation by the National Safety Council of hazards involved in paint spraying.

Standardization of Tool Holders and Tool Post Openings

Your committee has appointed W. H. Flynn, superintendent of motive power, New York Central, to represent the Mechanical Division in the standardization of tool holders and tool post openings, which has been undertaken by the American Society of Mechanical Engineers.

Single Plate Cast-Iron Wheels

Request has been received from several railroads to conduct tests of the single plate design of cast-iron wheels under cars in interchange service. These wheels are up to not less than standard normal weight, are interchangeable with the present standard wheels as to diameter, tread, contour, etc., and are made to A. R. A. specifications.

Your committee has authorized the Wheel Committee to pass on a maximum of 5,000 wheels of any one make to be distributed among the railroads desiring to make this test and that these test wheels, marked "ARA-X," will be acceptable in interchange to the extent authorized.

Locomotive Inspection Rules

During the year, your committee has conducted negotiations with the Bureau of Locomotive Inspection, Interstate Commerce Commission, relative to rules for the inspection of locomotives propelled by other than steam power. A code of rules mutually satisfactory to the Interstate Commerce Commission has been prepared and issued.

Your committee has also been designated to act for the member roads who have given their authority in connection with questions arising under the existing steam locomotive inspection rules referred to the association by the Chief Inspector, Bureau of Locomotive Inspection, Interstate Commerce Commission.

Report of Joint Committee on Drinking Water Supplies

The report of the Joint Committee on Drinking Water Supplies presented by the Medical and Surgical Section last year has not been approved by your committee as written, as the recommendations contained would result in unwarranted expense to the railroads. This report is being reviewed in detail by the Mechanical Division representatives on the joint committee.

Nominating Committee

The committee recommends that no ballot be taken for this year for members of the Committee on Nominations. The present committee is composed entirely of past presidents of the former Master Car Builders' and Master Mechanics' Associations and a past chairman of the Mechanical Division. It is recommended that the present committee be continued, John Purcell, assistant to vice-president, Atchison, Topeka & Santa Fe, being appointed in place of W. J. Tollerton, deceased.

(The report also includes routine announcements concerning the following subjects: the 1925 annual meeting; issuing the proceedings of that meeting; the 1925 letter ballots; issuing the revisions of the Rules of Interchange, the Loading Rules, and the Tank Car Specifications; the work of the mechanical inspection department; the power brake investigation, and the extensions of effective dates of various rules and regulations.)

The report is signed by J. T. Wallis (chairman), chief of motive power, Pennsylvania; L. K. Sillcox (vice-chairman), general superintendent motive power, Chicago, Milwaukee & St. Paul; C. F. Giles, superintendent machinery, Louisville & Nashville; A. Kearney, superintendent motive power, Norfolk & Western; J. Purcell, assistant to vice-president, Atchison, Topeka & Santa Fe; C. E. Chambers, superintendent motive power and equipment, Central Railroad of New Jersey; C. H. Temple, chief motive power and rolling stock, Canadian Pacific; G. E. Smart, chief car equipment, Canadian National; J. S. Lentz, master car builder, Lehigh Valley; J. A. Power, superintendent motive power and equipment, Southern Pacific Lines in Texas and Louisiana; O. S. Jackson, superintendent motive power and machinery, Union Pacific; F. H. Hardin, assistant to president, New York Central; W. H. Fetner, chief mechanical officer, Missouri Pacific; A. R. Ayers, assistant general manager, New York, Chicago & St. Louis, and J. T. Tatum, general superintendent car department, Baltimore & Ohio.

Discussion

C. E. Chambers (C. R. R. of N. J.): I move that the report be received.

The motion was duly seconded and carried.

Report of Committee on Nominations

The terms of office of the chairman, vice-chairman and seven members of the General Committee expire June, 1926.

In accordance with Section 7 (a) of the Rules of Order of the division which provides that officers of the division shall be elected at the regular meeting of the division held in June of each year, your committee nominates the following for the offices of chairman and vice-chairman:

For chairman—Term expiring June, 1927: L. K. Sillcox, general superintendent motive power, Chicago, Milwaukee & St. Paul.

For vice-chairman—Term expiring June, 1927: G. E. Smart, chief of car equipment, Canadian National.

As the terms of seven members of the General Committee expire in June, 1926, your committee nominates the following to serve until June, 1928, as members of the General Committee: C. E. Chambers, superintendent motive power and equipment, Central Railroad of New Jersey; C. F. Giles, superintendent machinery, Louisville & Nashville; E. B. Hall, superintendent motive power, Chicago & North Western; A. Kearney, superintendent motive power, Norfolk & Western; J. E. O'Brien, chief of

motive and equipment, Seaboard Air Line; John Purcell, assistant to vice-president, Atchison, Topeka & Santa Fe, and J. T. Wallis, chief of motive power, Pennsylvania.

Your committee also nominates S. Zwight, general mechanical superintendent, Northern Pacific, to fill the unexpired term of W. J. Tollerton, deceased, whose term as member of the General Committee expires in June, 1927.

The report is signed by F. W. Brazier (chairman), assistant to general superintendent rolling stock, New York Central; H. T. Bentley, general superintendent motive power and machinery, Chicago & North Western; G. E. Chambers, superintendent motive power and equipment, Central Railroad of New Jersey, and J. J. Hennessey, assistant master car builder, Chicago, Milwaukee & St. Paul.

Discussion

George McCormick (S. P.): I move that the report be received. The motion was duly seconded and carried.

F. W. Brazier (N. Y. C.): The Nominating Committee has to nominate, according to the by-laws, by taking from the Executive Committee the chairmanship and vice-chairmanship, consequently, we have taken the last car man on the Executive Committee, Mr. Smart.

I would like to suggest that the Executive Committee look into the possibilities of increasing its membership by two, so as to give us a wider scope and allow us to get in more available men.

Chairman Wallis: The General Committee will be glad to take under consideration anything that Mr. Brazier says, and I think it will be of great assistance to my successor if Mr. Brazier will put these suggestions in written form.

Report on Design of Shops and Engine Terminals

Photo Bachrach
W. A. Callison
Chairman

The committee report presented at the Mechanical Division meeting last year was devoted to a study of the layout of a shop for passenger car repairs and referred briefly to steel car repair plants in connection therewith. In presenting the following report on freight car repair plants, particularly with reference to the progressive system of repairs, the committee seems to have anticipated a growing interest in the problems of the car department. The report is a study of a layout for repairing all-steel and composite box cars. One reason which influenced the committee in emphasizing the importance of proper car shop design for plants handling steel car work was a recognition of the fact that about 70 per cent of the total freight equipment owned by the railroads of this country is now of all-steel or steel underframe construction. These cars will be coming in for general overhauling or rebuilding in increasing numbers from year to year. The information contained should provide a fund of valuable information for those charged with the responsibility of constructing or rebuilding car repair shops.

Freight Car Repair Shop

The plan included in this report shows a general layout for a modern freight car repair shop. In presenting this plan the committee has, to some extent, incorporated the best features and ideas practiced by the several shops visited and attention has been given to articles in technical papers and other sources, covering this subject.

This shop is 600 ft. long by 210 ft. wide and has room, or capacity, for standing 45 cars. There are two central stripping (incoming) tracks and four repair (outgoing) tracks. The planing mill, dry kiln and lumber storage are at one side and the truck and wheel shop at the incoming end of the main repair shop. The machinery bay, or fabricating shop, is between the incoming tracks. When designing this layout, the committee felt that a shop suitable for the larger roads should be presented. This plan provides some flexibility to accommodate the needs of either large or small roads and can be adjusted easily without altering the general scheme.

Referring to the general plan, it will be noted that composite or box cars are indicated going out on the two tracks adjacent to the lumber supplies and all steel cars are run through on the two tracks on the opposite side of the shop. This arrangement is not fixed and cars of any type desired may be run through on any track available. For the best routing operation, cars should be placed in the shop segregated by classes and the above mentioned system followed. Where cars of the same type or series are sent to the shops periodically, the maximum efficiency and output can be obtained.

The planing mill is indicated on the layout, but no details are shown for the reason that in many cases one mill serves both passenger and freight shops.

Repair Shop Progressive Movement

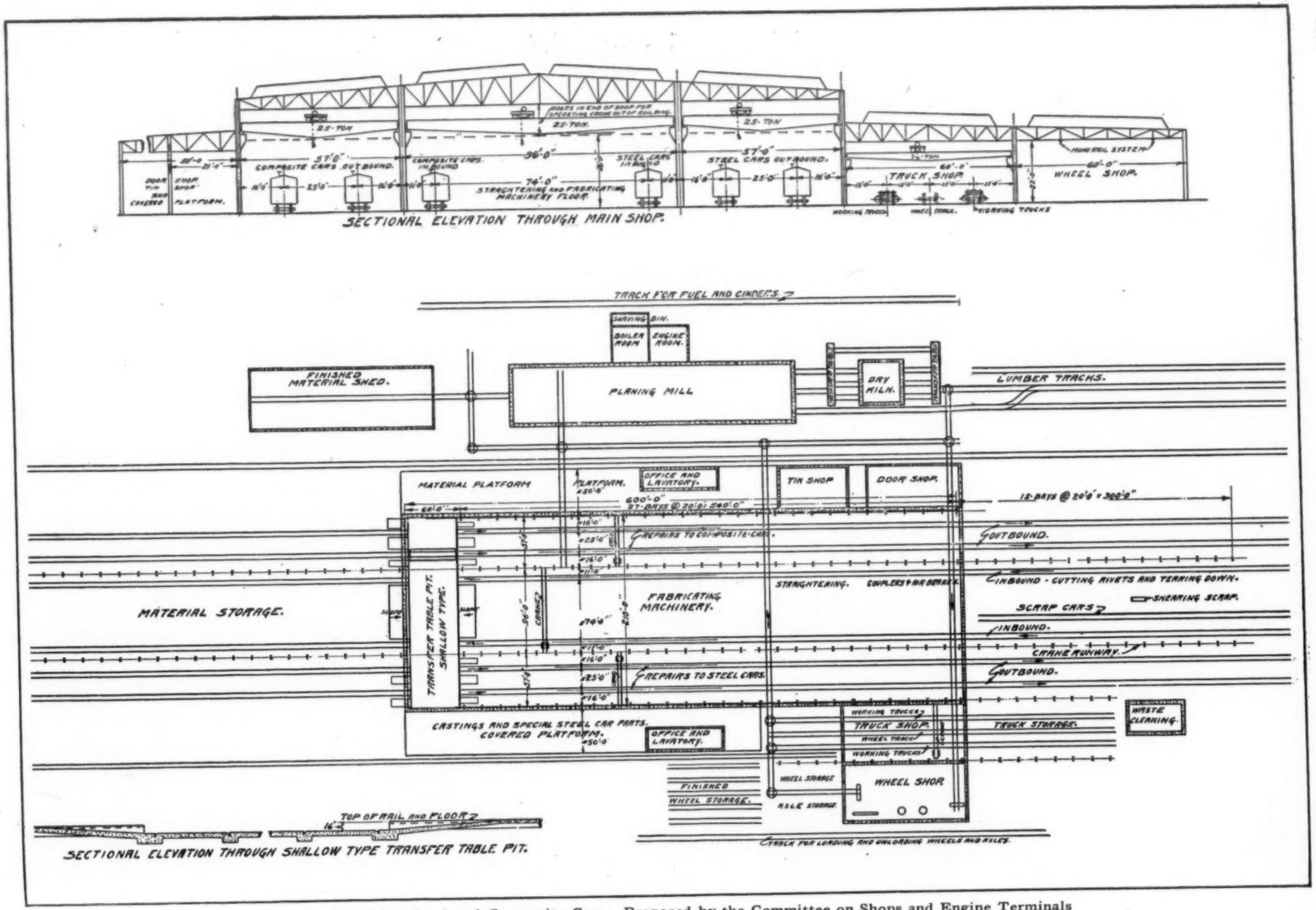
Cars enter the shop on the central or stripping tracks after all rivet heads have been cut and rivets backed out. Scrap sheets are removed outside the shop and good sheets loaded in the same cars, or left in place with tack rivets, as the situation requires. At this point, it may be well to mention that it is the intention to handle scrap direct from the docks to destination. Suitable facilities are provided to accomplish this both for metal and wood scrap.

Having entered the repair shops, the first operation would be to remove and repair the trucks or replace them with repaired trucks in kind; or trucks may be allowed to remain under the car until it reaches this section of the shop on its outward movement when trucks can be replaced in kind or removed and repaired. The next operation is to remove all couplers, draft rigging and air brake equipment as may be found necessary; and doors, etc., in the case of wood or composite box cars. The next movement of car provides facilities for taking off the sheets and doors for straightening or repair. The underframe may be removed and straightened or repaired next if necessary, but the large majority of repairs will not require this. Arriving at the end of the shop, the car is switched by a transfer table to one of the outgoing tracks. This transfer table is of the shallow pit type so as not to black trucking and other traffic through the shop. If the shop is not worked to capacity, the inside outgoing tracks should be favored as they are nearest to the central machinery bays. The best route for wood or composite cars has been mentioned, that is, on the planing mill side of the shop. The car proceeds, hauled as necessary by pullers, to the fabricating position where gangs fit and key-up all sheets ready for riveters. This work includes floors cross ridge sheets, doors, etc. The next movement of car provides work for riveters and all riveting is done at this station. Underframes removed and repaired or renewed will require some special treatment, but this will in no way interfere with a continuous method of operation. The next movement of car is for application of trucks, safety appliances, draft gears, couplers and brake equipment. Painting and stencilling are performed in the paint shop. Stencilling may be done in the yard, in good weather, if desired.

From the above suggested routing scheme, under the progressive system, it is seen that the committee has taken what seems to be the best of modern car shop practices and so adapted them to this shop layout that the least possible movement of men or material is experienced throughout the entire repair program. In general, cars come in on one track and drop parts in order at stages where the repairs to these parts take place and when the car returns on its outward trip, these same parts are picked up in reverse order and applied to car as it passes these respective repair stations.

Truck and Wheel Shop and Waste Cleaning Building

After the trucks are removed from the cars they are taken on the cross track shown on the print to the truck shop where a 7½-ton overhead crane places them upon the truck storage tracks. This same crane brings the trucks into the shop and after being repaired, the trucks pass out the opposite end of the truck shop to the truck storage platform and thence into the main shop at the cross track shown. Wheels taken from the trucks are run into the wheel shop and dismounted. The wheel shop is also so situated



Shop for Repairing Steel and Composite Cars. Proposed by the Committee on Shops and Engine Terminals

that wheels and axles can be unloaded from cars immediately adjacent to it, and after being run into the shop, the mounted wheels are placed on the finished wheel storage until they are needed in the truck shop.

After the trucks go into the truck shop the waste is removed and sent to the waste cleaning facilities for reworking. The cleaned waste is available for packing the cellars of the outbound cars.

Storehouse and Material Storage

The location and arrangement of the central store plant is not shown as it will depend upon the facilities involved other than the car repair plant. However, much of the material that will be used in this plant is stored adjacent to it. Steel plates and other steel sections are stored both outside and inside of the building near the transfer table end where these materials are under the crane and can be easily transported to the fabricating machinery.

On the steel side of the shop is located a platform for special steel car parts and also material for the truck shop. On the wood side of the shop is a material platform for the storage of finished material for wood cars—also, grab irons, bolts, nuts, washers and all miscellaneous small castings. These platforms may be covered or left open depending upon the climatic conditions of the locality in which the shop is situated.

While a steel and wood side of the shop is designated, it can be worked as all steel or wood if necessary.

The report is signed by W. A. Callison (chairman), superintendent motive power, Chicago, Indianapolis & Louisville; J. M. Henry, assistant chief of motive power, Pennsylvania Railroad; I. S. Downing, general master car builder, Cleveland, Cincinnati, Chicago & St. Louis; B. P. Phelps, engineer shop extension, Atchison, Topeka & Santa Fe; Henry Gardner, special engineer, Baltimore & Ohio; J. Burns, works manager, Canadian Pacific, and G. S. Edmonds, superintendent motive power, Delaware & Hudson.

Discussion

J. J. Tatum (B. & O.): A part of this report on page 2 reads:

"A survey of the freight equipment owned by Class 1 railroads showed a total of 680,685 all-steel, and 992,212 steel underframe, or a total of 1,672,897 cars which will need to be repaired." Do I understand that there are that many bad order cars in this country?

W. A. Callison (C. I. & L.): That is the total number of steel cars owned, good and bad.

L. R. Wink (C. & N. W.): Mr. Dunham was hoping to be here today, but at the last minute it was impossible and he requested me to present his comments. (Mr. Dunham's written discussion follows.)

The application of productive methods to repairing systems, or what in some cases might be called lack of repairing systems in handling freight cars, has made wonderful strides in the past few years. It has been remarkable to note the satisfactory results in adopting a system to the average repair track. Whether the plan of moving the car to the man or the man to the car is adopted makes little difference in the final results. If a definite system of handling and following up the work is determined upon and maintained, big improvements in output and unit costs results.

One of the elements which has to do with the improvements in the performance of many repair tracks at the present time is the specializing on certain types and classes of equipment. If on one part of the system refrigerator cars naturally segregate themselves and on another part flat cars accumulate in greater numbers than other types, or on still another part automobile cars are the principal ones used, it is but natural to specialize on the repair tracks in those territories on those particular types of cars. A little further specializing would put one make of car on the tracks at a given point and another make of car on the tracks at another point. This specializing makes the work not only easier and more efficient on the part of the repair man but has a great deal to do with increasing the efficiency of supervision, furnishing of material and reduction in total repair stock carried on the road.

Even with the segregating of work in this manner, the condition exists of desiring to run one car ahead or around another as they are being repaired and any shop planned for the repairing of freight cars should provide such facility. Cranes and crane ways should permit a car to be picked out of the line and set ahead when required.

In planning a shop we are invariably restricted by insurmountable obstacles which require our putting the desired facilities inside of a definite area. One is fortunate who can disregard the surroundings of the ground where he proposes to place his shop, as he ordinarily can then lay down his plan of operation for carrying on the work and then put his buildings to suit.

Sometime ago we figured on a general plan for a repair shop of considerable capacity and our study resulted in the tentative adoption of a shop plan. There are two approaches to the shop, one of which comes from a storage yard for steel cars or composite cars and the other from a storage yard for wooden cars. In this storage yard the various classes and types of cars are switched separately on tracks and handled to the shops in groups. In the same general location as these storage yards, there are the stocks of material which will be handled, by truck mostly, to the various fabricating shops through which they pass in line to the repair shop, either by means of trucks on the roadways or trucks on the rails.

As the cars for repair approach the shop they are spotted for inspection and stripping, they are then moved on into the shop. The three outer tracks on both sides of the shop are continuous through and out of the shop on the other end. The next two tracks are also continuous but they pass between stub tracks which extend only inside the building, and should be some distance from each end. The two center tracks in the shop are also continuous through the shop. These are the ones which will be used mainly for material which needs final setting up or tool work before actual application to the car.

Light repair cars will be run through, on the three outer tracks, in sequence. Heavy repair cars will be set into the shop on the next two tracks and will be spotted on these tracks opposite or approximately opposite a vacant space on the shop stub tracks. The cranes provided over all these tracks will be of sufficient capacity and in double units to pick such a car off the running track and place it on one of the stub tracks where the repairs will be carried out. If the tracks need to be overhauled, the car body will be placed on horses and the trucks taken to the end of the shop for necessary attention.

The switching of cars will be done before and after shop working hours and during the shop working hours these running tracks in the shop will be open and left free for the handling of material by tractors.

The center of the body of the shop will be provided with whatever supplementary tools may be necessary to give final attention to stock or special material before application to the cars. Light repair cars, of course, will move through the shop and be painted under the open shed, if necessary, before being collected on the outgoing tracks for returning to service. The heavy repair cars will be picked up by the cranes and placed back on the through tracks in line for the outgoing handling and painting.

This layout is not offered as a substitute for the committee's plan but simply one to indicate the necessity for having a shop meet local conditions in the most efficient manner. This shop will, in its location near a large terminal, be required to handle a considerable number of light repair cars as well as heavy repair cars and the service requirements were the primary reasons for the consideration of the plan shown.

Mr. Brazier: The use of galvanized iron on buildings

and shops is throwing away money. Look at the portable automobile garages throughout the country. In less than three years, I have noticed that they go to pieces. I bring this up because while the report recommended that the buildings be covered with steel or wood, I do not know whether plate steel or galvanized iron is meant. My experience has been that it is a waste of time and material to cover any kind of building, especially if it comes in contact with dampness or the ground, with galvanized iron.

C. J. Wymer (C. & E. I.): The car department has been held back in the past because they have not been provided with proper facilities to do the quality of work that they ought to do and also to do it as economically as they could if they were provided with the proper facilities.

I discussed this report with other car department supervisors on our road and we felt that this layout was in general satisfactory. Of course, the shop has to be laid out, to a certain extent, to the space available and while the situations at one place might accommodate certain conditions, at another, space would not permit. I don't quite like the truck shop location. The trucks ought to be repaired nearer the cars. There is also the matter of accumulation of scrap from truck repairs. Instead of providing for loading the scrap when you strip the cars, repairs ought to be made before the car really enters into the building-up process, and in the neighborhood of where the other stripping takes place, so that all scrap will be consolidated and ready for loading at one point.

I also believe that a continuous movement instead of a reverse movement is more satisfactory where conditions would permit. Transferring the car, of course, takes time. Again, with the continuous movement, fewer parallel tracks would accommodate an equal output. You would not need stripping tracks to run these cars to the transfer table and bring them back. You will take them through in the building process. The fewer tracks you have the less interference handling material as well as in movement of men.

I am a great believer in facilities and this progressive movement. We have put in a little facility on our railroad. It is not a shop; it is just an outdoor arrangement, where we are building some cars, practically new, on some old trucks. We have some framework built up on which we can have portable riveters and hoisters for handling materials, and through that facility we are putting through five cars every day, saving approximately $50 per car repair. We are doing a better quality of work by moving the car to the man—each set of men do certain things and they learn to do them well and rapidly.

Mr. Callison: Mr. Wymer referred to the truck shop location. We do designate a location for the shop; that is a matter for your own consideration. The trucks can be prepared as the car enters the shop. If you are handling one series of cars you can accumulate your trucks ahead and put them under the car and move the old trucks into the shop, or where only light repairs are needed, they can be handled either on the incoming end or when the car is coming back.

We thought we had an ideal location for scrap because the scrap is taken off the cars and dumped right on the stripping track. We have provided quite a lot of room there with an overhead crane and track storage for cars, so that they can lift the scrap into the cars without making any unnecessary movement. The committee thought it had a nice situation there.

Mr. Wymer spoke of the continuous movement of the cars, in one end and out of the other. There are, no doubt, places where that would be ideal and would work out better than a closed shop, but there is one thing that I am afraid Mr. Wymer overlooked, that is, where we bring the car in through the central aisle we strip off the air-brake material, couplers and so forth. These are repaired right there and when the car passes that point we pick it up. You could not do that on a continuous movement, you would have to drop your stuff and have it follow the car.

Mr. Wymer: I did not intend to criticise the scrap arrangement. The only thing I criticise was the truck shop location, and suggesting that the scrap in the truck shop would not work in with the facilities.

G. E. Smart (Can. Natl.): The question was brought up about the trucks. It depends on the class of work that you are doing in the shop that you are designing as to just how you will handle the work through that shop. If you are putting your cars through in series, putting on the same betterments, doing about the same amount of work on all of them, you can lay out your work to good advantage. On heavy car repair work, you should take your trucks out from your car, put them in one place in the shop, where you can have the work all done by truck repair men. By that means you will get a much better job. You can supervise it much better than having your trucks repaired by the man who is doing your body work. It depends on the class of work as to whether you will follow that practice or not.

If you are going to put through a variety of cars in your shop, with a variety of work to be done on them, then the trucks should be left at the car, so they can be repaired by the same men. It is a good idea to provide for a stripping track. For instance, take off all the old woodwork off your car outside of the shop in order to keep the refuse out of the shop as much as possible.

The reason why railways have had to place their cars with outside contractors in the past is because they have not had proper facilities to do their work economically.

C. G. Juneau (C. M. & St. P.): The so-called spot system of leaving cars stationary, and moving your force and material to the car is a thing of the past. The progressive system of moving the car tends towards reducing the cost of the facilities. On two tracks you can accomplish with this method what you did in the past on about six, by continually moving the cars up. A great many of the railroads have such shops. One that is considered very economical for handling the work is on the Pennsylvania. The facilities they have meet their requirements and produce results at a greatly reduced cost.

We should not mix our light cars in a shop where we handle heavy repairs, because that causes confusion inasmuch as the light cars move rapidly on account of the small amount of work to be done. In the heavy repair shop if you strip your cars just as far away from your actual operation as you possibly can, you will keep the scrap materials away from the actual operation. Men walking around the car must have room to move in order to get the best and most efficient results in car operation.

M. A. Kinney (H. V.): To operate your car shops economically and to keep these cars in service they should be handled by series. Is there any reason that we should not, in buying one or two thousand cars, keep our fingers on them so that we can overhaul them all at one time? None of you here would think of sending a bunch of cars to an outside shop and mix them up as you do in your average railroad shop. Go over the country today and you will see a half a dozen series of cars receiving general overhauling in a small shop. Keep in touch with your cars so that when they do come up for general overhauling you can put them through at one time. It means economy.

I. S. Downing (Big Four): As a member of this committee, I want to call attention to the fact that nothing has been said about the upper structure of the shop—that belongs to another section of the A. R. A. This is a

progressive shop and if worked out it means a car moved about every 45 min. It is not a double-end shop—that means storage of materials. Materials going into our cars today are heavy and it is a question whether you can transport it crosswise cheaper than you can from the back of the shop. We tried to work this system at Beech Grove, which is a double-end shop, and found that it could be done. The committee witnessed the operation of a shop of practically this design, and thought it worked out well.

There are no 1,000 cars that wears out all alike, 100 cars in that 1,000 may go 15 years. The general average is probably nine or ten. Where you contract, especially, you have 500 cars where 50 need repairs and you will run them all through. It does not take a lot of money to take a half a plate out during the year, you can do it on a light repair track.

In the shop that we investigated the truck shop was designed to put a special truck under the car. It had a simple pedestal under the center plate and did not interfere with work right around the center plate rivets. As cars passed into this shop the air brakes, drop doors and the sheets were taken off and as they came out on another truck they were put on. The organization was in the riveting gang and was known as the unit system. If a half dozen of these workmen were off their supervisor, not the shop supervisor, but the men's supervisor, who was paid for that work, would pick men and say, "You go down and fill out this gang." The earnings were divided according to the number of men in the gang.

I believe that the Association should go slow on the exceptionally large shops. There is no question but what the consolidation of railroads is coming. We are liable to build a million or a million and a half dollar shop at some place and then be consolidated with some other road 100 miles away that has a big shop. It is well to get this thrashed out and obtain a layout that we can use, but I think we should go slow in building large shops until after consolidation has taken place.

W. H. Clegg (Can. Nat.): We are all interested in the facilities for effectively doing repair work, the ultimate object, of course, being to obtain greater efficiency at the same cost and at a reduction of cost if possible. In this connection, I know of no other part of a car equipment that requires greater care and precision in cleaning, testing and maintaining than the air-brake equipment. It is my experience that this can best be done where a shop having sufficient room is provided. Did the committee consider a separate shop or a small room set aside for this important work?

Mr. Callison: We had in mind a separate room near where the air-brake equipment comes off.

R. L. Kline (Penna.): Naturally, this committee designed this as a general repair shop with reference to the individual system, just as is necessary for the kind of shop that they want to build, whether it is a box car shop or a steel car shop. Insofar as the handling of the trucks is concerned, the proposed layout can not be criticised. The truck is handled over to the wheel shop, to take care of the wheel work. If you do not have a wheel shop in connection with this general repair shop, you would probably not handle your trucks to a separate platform. But in handling your trucks to a separate platform you can have raised tracks and reduce the cost of the truck repairs.

Another point that has not been touched on is the fabrication of material. It is essential that the material be fabricated in the most economical way—such as the steel parts by gap riveters and the straightening of the bars and repairs to the couplers, depending on the kind of shop you have, as to the location of the machinery. Another big feature is the scheduling of the material, not only your raw material but your finished parts. Unless the scheduling of material is done in the most careful manner you are going to hold up a process shop of this kind.

The committee has given you a pattern for a shop and you will have to apply it to the particular design of shop you need and to the space in which you have to build that shop.

C. E. Dempster: You cannot rebuild a thousand cars all at one time simply because you buy them at one time—they don't wear out that way. You can, however, segregate your series of cars until you get 200 or 250 alike and if you do that you will keep down your stock and have the material ready when the car is built.

S. Lynn (P. & L. E.): We do not want to forget the fact that there are a number of roads which have shops and because they have a limited amount of money they can't go into a new shop proposition. We happen to be one of those roads, but we have learned that we can repair our cars more economically than we were doing, and have been working on a spot or progressive system of repairing.

One gentleman said he had saved on a certain type of car approximately 50 dollars. I can say that we have had a similar experience, saving 40 to 50 dollars on two or three types of cars and we got the car repaired better. Even with old facilities there are lots of things that the car man can do with little expense that will permit the adoption of that system and the saving of money.

George W. Rink (C. R. R. of N. J.): With reference to the shop layout as proposed, for a small shop, it would be better for the fabricating machinery to be located along the wall at the bottom of the illustration, for the reason that practically all of the material required for blacksmith repairs are carried outdoors, such as second-hand coupler yokes, small castings and couplers that have been straightened. They are most accessible if they are adjacent to these small blacksmith fabricating shops than to have all material brought from the outside along the center of the shop and fabricated between the tracks.

It is wise to have a space between the third and fourth track so that in case you have any heavy underframe work to do you can set the underframes in the center and do the work. There are some cars that will require a little heavier work than others, such as assembling side sheets which can be done at this point. My theory is that along the side of the shop, toward the bottom of the illustration, you put a series of small shops devoted to air brake repairs, blacksmith work, drilling, small pressing and salvaging.

When the trucks are sent to the truck shop, generally the large parts need straightening. Some of them have lost their set. That is another argument in favor of having the small reclamation plants adjacent to the wheel shop.

E. Warren (Erie): We have been repairing cars at the Kent shops of the Erie on the progressive plan for about five years, and from our experience I hope that the committee will give serious consideration to the matter of prepairing a layout whereby the cars will move continuously through the plant.

There are two principal reasons for this: First, there is an objection to any backup movement; second, it is preferable to keep the steel car men separate from the wood car men. This applies, where you are working on composite cars. The noise from the gang of steel car men is very objectionable to the wood car repairmen. By employing the continuous, through movement here, you can get away from this objection.

Mr. Downing: I want to caution some of these fellows on this progressive system by saying that either they were not very husky to start with or they are cutting it down. You know on a 1,400 or 1,500-rivet car the labor runs about $150, and when $50 is cut out of $150 worth of

labor, either the $150 was rotten to start with or the $100 is darn good now.

E. Wanamaker (Rock Island): One of our first problems is to secure the cooperation of the transportation department and the purchases and stores department; first, the transportation department, to enable us to have the cars in the proper blocks or series or sequence, and at such time, if it is possible that the finances be arranged, so that the cars can be shopped when they will not be in revenue service. In other words, make the most of a slack period. The purchase and stores department must co-operate in seeing that the material is economically obtained, not ahead of time for the particular block which is to be shopped, but so that when this block of cars does go through, there will be absolutely no delay for material, and that such material be economically supplied.

E. J. Kueck (Cotton Belt): Our shop in a great many details is similar to the shop shown in the report, with the exception of the transfer table. Are there any roads, in the repair of freight cars, using the type of transfer table shown in the report?

Mr. Callison: The Western Pacific has them. We found one shallow table on the Southern Pacific, and one on the Western Pacific.

Mr. Tatum: I move that the report be accepted and the committee be continued with instructions that consideration be given a system and a layout of shop that will insure a car being taken from revenue service in bad order from the transportation department and returned to them in good service condition at the least cost.

The motion was duly seconded and carried.

(The first session of the convention then adjourned).

Registration, American Railway Association

(Continued from Page 1560)

Slater, E. W., Str., A. C. & Y., Sterling
Sloan, J. F., P. A., I. R. T., Marlborough
Smith, C. Edward, Gen. Mat. Sup., Penna.
Smith, Montgomery, Pur. Agt., Penna., Chelsea
Smith, M. S., P. A., N. Y. C., Haddon Hall
Sorensen, A. L., Mgr. Stores, Erie, Strand
Sowell, A. W., D. W. Sk., Cent of Ga., Ambassador
Sprague, C. M., M. W. Sk., Penna., Haddon Hall
Spratley, John O., Str., Ind. Union, Kentucky
Stackpole, W. S., Gen. Stk., Public Service, Haddon Hall
Stevens, H. C., Genl. Str., Wabash, Haddon Hall
Stiers, I. L., Stk., H. V., Belmont
Sullivan, J. L., Genl. Trav. Sk., U. P., Traymore
Sunderland, Clark W., Ch. Cl. Stores Mgr., Penna.
Sutherland, L., G. Sk., P. & L. E., Traymore
Tallmas, C. H., Str., N. Y. C., Haddon Hall
Taylor, H. L., Asst. P. A., Can. Nat., Chalfonte
Taylor, J. H., Str., A. C. T., Chalfonte
Taylor, Wm. H., Reporting Sk., Penna., Haddon Hall
Therrell, G. H., G. S. K., G. M. & N., Haddon Hall
Thompson, A. S., P. A., Col. & Greenv.
Thompson, H. M., Ret. Str., Penna., Iroquois
Thompson, L. C., Mgr. of Stores, Can. Nat., Chalfonte
Thorpe, E. G., Genl. Str., Long Island, Pennhurst
Trudeau, S. J., Asst. to P. A., B. & M., Chalfonte
Trudel, J. A., Div. Stk., N. Y. N. H. & H., Belmont
Van Horn, J. T., Stationery P. A., Mo. Pac., Haddon Hall
Vroman, F. G., S. K., N. Y. C., Osborne
Walker, E. L., P. A., A. C. & Y., Sterling
Walsh, Charles E., Asst. P. A., Penna., Traymore
Walsh, P. H., Gen. Str., A. C. L., Chalfonte
Wardlow, M. H., Stk., D. L. & W.
Warren, H. E., Mgr. P. & S., G. M. & N., Ambassador
Watkins, John W., Dis. Sk., L. V., Monticello
Weisenburger, F. V., Timber Agt., No. Pac., Chalfonte
Whaley, W. R. F., Asst. Stationer, Penna., Breakers
Wheeler, W. L., A. G. S. K., C. & N. W., Haddon Hall
White, C. S., P. A., N. Y. C., Ambassador
White, E. W., Genl. Matl. Supvr., Penna., Chalfonte
Whitman, J. H., Catalogue Insp. Stores, Penna.
Williams, C. B., P. A., C. R. R. of N. J., Traymore
Williams, C. R., Div. Sk., M. & O., Chalfonte
Williams, D. A., Asst. to P. A., B. & O., Llewelyn

Special Guests

Alquist, Wm. E., Strand
Band, W. V., For., Penna.
Baker, G. W., Insp., A. R. E.
Beebe, Geo. W., Penna.
Besler, W. G., Pres., Jersey Central, Dennis
Bossom, W. R., Gang Foreman Car Repair Dept., Penna. R. R.
Bradley, J. D., Pennhurst
Bradley, W. V., Shelburne
Brady, Carson, Ambassador
Bricker, Lee C., Asst. For., P & R.
Brandy, Frank, Ambassador
Brown, J. L., Asst. to Office Mgr., S. A. L., Chalfonte
Cleapor, C. H., A. R. A., Insp., A. B. & A.
Collyer, Robt., Frt. Rep., Penna.
Conrow, A. G., Mach., Penna., Atlantic
Cunningham, Prof. Wm. J., Harvard University, Haddon Hall
De Ment, W. A., Mc. B. Acct., The Live Poultry Transit Co., Shelburne
Dickenson, C. M., R. F. & P., Traymore
Dickerhoof, Jr., R. A., Knickerbocker
Dix, Chas. S., Boilmaker, Penna.
Downs, I. J., Haddon Hall
Duff, S. B., Frt. Agt., McKeesport Conn., Strand
Duffy, A. F., Insp., I. C. C., Elberon
Duryea, O. C., Strand
Fetters, Jack, Mech. Eng., V. P., Ambassador
Firnhaber, E. R., A. B. For., N. Y. O. & W., Breakers
Fisher, F. L., Engineer, C. & N. W., Royal Palace
Fisher, W. J., Trav. Insp., S. L.—S. F., Haddon Hall
Fitzgerald, William, Breakers
Foster, Esty, Spec. Insp., N. Y. C., Haddon Hall
Fox, John F., For. N. Y. O. & W., Washington Inn
Gallagher, Dist. Frt. Agt., B. & O.
Gilbert, Sr., J. B., Foreman Penna. R. R., 802 N. Ohio
Goodwin, B. C.
Gunn, Chester, A., Shop Track Insp., K. & T. Ry., Osborne
Halbert, W. S., Haddon Hall
Hamilton, Chas., Dist. Pass. Agt., Wab.
Harrold, J. W., Penna.
Hart, Thos. H., Car Repairer, N. Y. C. R. R., Princess
Harvie, Douglas, Mach. Shop Foreman, D. L. & W., Ambassador
Hays, T. C., Insp., I. C. C., Elberon
Hedlund, H. J., Atlantic City, N. J.
Holton, F. C., Ch. Draft., Virginian, Ambassador
Hoskins, John M., Mill For., D. L. & W.
Howard, W. J., Clerk, Pur. Dept., Penna.
Jackson, W., Atlantic City, N. J.
Johnson, C. C., For. Car Insp., Penna.
Jones, W. L., A. R. A., Insp., U. P., New Crest
Keeper, E. W., Clerk, W. J. & S.
Kenney, George L., City Frt. Agt., D. & R. G. W., Royal Palace
Kikmer, C. V., Trv. Car Dept. Acct., B. & O., Knickerbocker
Kirk, L. F., Y. M., B. & O., Elderado
Kotalic, Andrew, Blacksmith For., C. R. R. of N. J.
Kuhlke, Oliver H., Fredonia
Ladd, Geo. T., Pres. Ladd Water Tube Boiler, Brighton
Layton, Jr., Master J. L., Barlton Apts.
Lowder, Howard, Dist. Pass. Agt., Pullman Co.
Lummis, Howard, Pass. Conductor, P. & R.
MacLean, Lachlan W., Elect. Suprvr., Atlantic City Railroad
Marshall, F. E., C. C. Car Dept., Interstate Tank Car, Continental
McDonald John, Insp., Penna.
McKee, Richard
McKee, Jr., R. G.
Merrill, F. A., Travl. Accountant, B. & O., Knickerbocker
Mohun, Jr., John S., Ambassador
Murray, Jr., E.
Nelan, E. J., Cl. Car Dept., Monongahela, Raleigh
Nelson, Chas. A., Draughtsman, D. & H., Breakers
Nelson, C. J., Ch. Interchange Insp., Chicago JNT., Ritz
New, Fred W., Ambassador
Oswalt, Jr., W. L., Iroquois
Pardue, Genl. Insp. Pass. Equip., S. A. L., Dennis
Parker, W. V., For., W. J. & Seashore
Parmly, Jr., E., Mgr.
Parslow, S. R., Mach. For., G. N., Dennis
Patterson, W. J., Asst. Dir. Bureau Safety, I. C. C., Marlborough
Pfeifer, A., Ch. Cl., A. R. A., Erie, Pennhurst
Rausch, Wm., Atlantic City
Rausch, Mrs. Wm., Atlantic City
Reading, A. R., Asst. Ticket Agt., C. B. & Q.
Rich, Martin S., Eng. H. For., B. & A., Princess
Sherwood, J. L., Trav. Car Repr. Acct., B. & O., Knickerbocker
Smith, F. H., Clerk, American Ry. Ex. Co., New England
Speakman, F. H., Asst. For. Car Shops., C. of N. J.
Sturgis, J. M., Cl. Pur. Dept., W. J. & Seashore
Supplee, Clerk, Mech. Eng., Penna.
Supplee, Sydney, Claims Investigator, P & R.
Taylor, Frank C., Gen. Car Insp., Penna., Ambassador
Walsh, Otto, For., D. L. & W., Bayles Cottage
Whaley, T. H., Boilmaker, Penna.
Williams, Fred K., Traymore
Williams, R. C., Gen. Malt. Supvr., Penna., Chalfonte
Wilson, Geo. F., Retired, D. L. & W.
Wilson, R. O., Secy to G. S. M. P., C. M. & St. P., Ritz
Wintermantel, Walter, Asst. Traffic Mgr., St. Louis Indep. Packing Co., Princess
Witel, E. J., P. A., B. & S., Marlborough
Wonnell, Grover, Str., Penna., Iroquois
Woods, J. L., P. A., N. C. & St. L., Marlborough
Wright, G. S., G. S. K., E. J. & E., Chelsea
Young, James, Repr. Marker Pur. Dept., Penna., Apollo
Young, W. H., Act. Str., Penna., Continental
Yzewyn, J. M., Reporter, A. R. A., Haddon Hall
Ziesel, Geo. L., Frt. Agt., Penna.
Zink, E. L., Dist. Sk., C. R. I. & P., Continental
Zoesse, F. T., Ft. Agt., C. & N. W., Ritz

D. C. Curtis
Vice-Chairman

C. D. Young
Chairman

W. J. Farrell
Secretary

Officers of Division VI—Purchases and Stores

Division VI—Purchases and Stores

Attendance at First Day's Session of Seventh Convention Approaches 500. Speakers Praise Work

WITH smiling skies and every other condition favoring a successful convention, the seventh annual meeting of Division VI—Purchases and Stores—A. R. A., convened promptly at 9.00 a. m. at Haddon Hall, on the water front at Atlantic City. It is estimated that 450 attended this session which was presided over by Chairman C. D. Young, all other officers and the members of the general committee also occupying the platform during the opening ceremonies. The meeting was opened with an invocation from the Rev. Henry Muler of the First Presbyterian Church of Atlantic City, and by remarks thereafter by J. H. Waterman, following which the convention was addressed by R. H. Aishton, president American Railway Association, and by W. G. Besler, president Central of New Jersey. The chairman then gave his annual address. The remainder of the first day's session continued until 1.30 p. m.

The following committees were appointed at this session:

Resolutions—O. V. Daniels, assistant gengeral storekeeper (Penn.), J. H. Beggs, purchasing agent (C. & E. I.), and P. H. Walsh, general storekeeper (A. C. L.).

Memorials—W. J. Hiner, purchasing agent (C. C. C. & St. L.), C. K. Reasor, assistant manager of stores (Erie), and J. J. Lamneck, stationery storekeeper (Penn.).

In his address this year J. H. Waterman directed his remarks particularly to the younger officers in purchasing and stores work, and by parables and references to his own early experiences, endeavored to give these men the counsel and encouragement essential to success and contentment in this work. Mr. Waterman's remarks are presented in part as follows, together with abstracts of the other addresses and committee reports.

Remarks of J. H. Waterman

J. H. Waterman

Young men, do not talk too much. Think what you are going to say and think twice before you say it. This applies not only in your every day work, but in your relation to your superior officer and the men under you.

Also, if you are a division storekeeper, you must deal with all the various operating officers on your railroad. You cannot be a success unless you can work harmoniously with them. That does not mean that they have any right or authority to run over you. Some of them have no idea of the position a storekeeper holds and how much they can serve the railroad by helping the storekeeper serve them. You must not lose your temper, and that is something very difficult to do at times, but strive with the one thought in mind always of harmony.

Again, the storekeeper who is successful today is the storekeeper who knows his stock and the best way to get acquainted with your stock, is with your stock book.

Not many years ago, storekeepers did not know what a stock book was. I remember when, if we wanted to order material, we ordered what we thought we needed and took a chance on getting rid of it when received. I have gone out in the lumber yard and ordered 40 or 50 cars of lumber at a time without any knowledge of when it would all be used, and nothing to compare the amount I ordered with the past consumption. Those were the days when railroads were building and reaching out sometimes hun-

dreds of miles in one year, and you could hardly get stock enough to take care of the railroads' wants. Today it is different. Few railroads are extending their tracks or building new lines, and those that do, anticipate what they are going to need, and the storekeeper is given an opportunity to provide for their wants. Therefore the stock book is the only basis on which you can successfully keep up your stock. For instance, if you had a great snowstorm in March and you used all the snow shovels you could get hold of, there would be no necessity in April of duplicating the order because you had issued a large number in March.

Finally the younger storekeepers should recognize that the man who works the hardest for the corporation which pays him for his work, is working the hardest for himself. If a man expects to be successful not only in the store department, but in any other department, he must think first and foremost and all the time for the railroad for whom he is working.

It should be emphasized however that the man who forgets the men under him, the man who cares for them only as he would care for an ox, is not working for the corporation that employs him.

I have just a word that I want to say to the purchasing agents and general storekeepers. It is contained in a little poem which I want to read to you. If it impresses you as it did me, no more need be said.

"If with pleasure you are viewing any work a man is doing,
If you like him or you love him, tell him now;
Don't withhold your approbation 'til the parson makes oration,
And he lies with snowy lilies o'er his brow;
For no matter how you shout it, he won't really care about it
He won't know how many teardrops you have shed;
If you think some praise is due him, now's the time to slip it to him,
For he cannot read his tombstone when he's dead.

More than fame and more than money is the comment kind and sunny;
The hearty, warm approval of a friend;
For it gives to life a savor, and it makes you stronger, braver,
And it gives you heart and spirit to the end.
If he earns your praise—bestow it; if you like him, let him know it,
Let the words of true encouragement be said;
Do not wait 'til life is over and he's underneath the clover,
For he cannot read his tombstone when he's dead."

Supply Officers and Public Relations

By R. H. Aishton

President, American Railway Association

R. H. Aishton

In the past seven years since the organization of Division 6 we have traveled far. As you well know, seven years ago the weather was rough. It was not smooth sailing for the carriers by any means. Everybody was dissatisfied and discouraged—railroad men and the public they served, alike. Since that time we have seen a wonderful improvement take place, not only in the condition of the railroads but more particularly in the attitude of public opinion concerning them.

What has brought about all this change in public opinion? In the first place, it is the courage of the railroad managements, in the vast expenditures made for improving the plant, amounting in the aggregate to about $4,000,000,000 of additional capital in the last few years.

In the second place, it is the coöperation as between the railroads themselves in their determination to provide adequate transportation, on individual lines and for the country as a whole, and, in producing such adequate transportation, to do it in the most economical and efficient manner possible.

Third, it is by the active and intelligent coöperation of the public, the shippers of this country, with the railroads, through the medium of what are known as the Shippers' Regional Advisory Boards, where all interests sit around the table together and find out first what the problem is they are going to meet, next how best to handle it and then, by working and coöperating together, jointly helping to bring about the desired results. Very often this means that for the good of the general situation the shipper will do things he never thought were necessary, or would never have thought of doing before, from a clearer understanding of the whole situation. Likewise, the railroads, regardless of their individuality, have coöperated when it is necessary to meet a situation, in order that the right result might be secured.

The outcome of all of this intelligent handling of matters has been to place the railroad industry on a plane, insofar as the opinion of the American people are concerned, where it never stood before. It has quieted most of the adverse criticism that was formerly aimed at the railroads, not always by those who knew, but sometimes by those who had selfish aims to accomplish, until today the railroads stands as an example of efficiency in the handling of their business in advance of almost any other business in the country.

So much then for what has been done. What shall we say about the present and the future? The past has at least one moral for us with respect to our future conduct and that is, that we should be open-minded, progressive and coöperative.

Last year at this meeting I stressed particularly to your membership the importance of this attitude of mind in the following words:

> My only suggestion to you is to leave no suggestion uninvestigated that tends towards more efficient and economical service. Regardless of your personal traditions and precedents, if some better way is developed of doing some particular job, if it has merit and if it does produce greater economies, don't hesitate to go to it, for the answer you are able to give as to economy in purchases, distribution and care of the materials and supplies, will in a large measure govern the judgment of shippers and the public as to the effectiveness of railway management as we know it.

You are all proud of the record the railroads are making; you are all proud to have a part in it. The value of the work of your division depends not on the length of the papers you produce, or the multitude of the suggestions and recommendations you make, but does depend in a large measure on the discussions, argument and consideration that they receive at the committee meetings of your sections, and on the final decision, as determined by the vote of your membership. It still further depends on your attitude of mind towards the final decision, whatever is reached, and how effective you make it on your own railroad.

If there is something decided upon here which is for the good of your railroad, even though it may not be in accordance with your precedents and practices, or with your personal traditions, if you vote "aye" and approve it at this meeting, go home and sell it to your people,

Members of the General Committee of Division VI—Purchases and Stores (W. S. Galloway, Missing)

because on the efficiency and the economy of your future operations depends in a very large measure the future of these railways. The great public who have the final decision are going to form their opinions from the character and adequacy of the service you afford, and the underlying conviction that the roads as a whole are being handled in the most economical manner consistent with adequate service.

Address of W. G. Besler

W. G. Besler

Division VI, as any and all of the other Divisions of the American Railway Association, exists and justifies itself because of the work it is doing and the accomplishment in the way of performance which it is demonstrating.

It is no different in any other organization or association. Committees are working for all, and committees are selected because all of those engaged in the calling or profession manifestly cannot act in any other practical way than through a sub-division of activity, whereby direct results may quickly be secured, except for such organization the aggregation would be nothing more or less than a typical town meeting.

Division VI is justifying its existence through the excellent work it is doing, and I find in the reports of the several committees much of vital importance to the Railroads, and much that has been actually and effectively accomplished in real dollars and cents to the Railroad Companies, as exemplified in those instances where the money is now in the bank or available in other directions, which otherwise or formerly might have been found in large inventories, large surpluses, carying of obsolete material and parts which should be converted into scrap or cash, as the case may be.

It would be difficult, or rather it would be utterly impossible for me to attempt to analyze or summarize concerning the excellent reports of the several committees, for that is the purpose of this convention in the discussion which will ensue.

If I should venture an answer to the question as to what, in my opinion, might be termed a consensus of your reports, I believe one word might possibly be applicable, and that word is "Economy."

I am with you today because under the organization of the American Railway Association I am, in my capacity as one of the members of the executive committee, charged with the duty of a quasi-supervision of Division VI.

In so far as any actual service has been concerned, it has been practically nothing, but I stand in the position of one who is "ready to serve"; and that it has not been necessary to appeal for assistance or influence or for help from sources outside of Division VI, is all the more to your credit.

I congratulate your committees upon their excellent reports.

I congratulate you members upon the excellence of your choice in selecting the members of your committees and I commend the work of the individual members and of the chairmen of the several committees.

Address of Chairman Young

I do not propose to make a formal address this morning, but want to talk to you about the work and activities of our representative committees, and our individual responsibility for the future guidance and development of the Division, that we may look with confidence toward the fulfillment of our associated aims.

This annual meeting at Atlantic City—a most delightful place for our work and studies of the Supply Exhibits—is for the primary purpose of reviewing and endorsing the reports which constitute the year's conclusion of the professional work of this Division of the American Railway Association. The professional knowledge of the service of supply is measured by the quality of the work done, and its contribution to the general business administration of the roads we serve, thus establishing in our field of activity the co-ordination so essential to the efficient and economic conduct of the country's transportation.

A general review of the submitted reports impresses one that the measure of economic gain to the railroads is in the superior handling of their supplies.

Our Division is to be congratulated upon the aggressive and painstaking manner in which its committees initiated, prosecuted and completed their assignments during the year. These results are indicated by the early receipt of the advance copies of the reports, permitting a review of the subject before assembling here. This was made possible by the prompt appointment of all committees as a result of the thorough and expeditious action of your Chairman of Committee on Committees. I urge similar action in the coming year as a means to assuring the advancement of the committee work, to afford a thorough digest of the year's work of the Division.

The report of your general committee suggests a strong stimulus to our younger members in the professional work of the section. It is that of an annual contest, consisting of the preparation of business or technical papers by the junior members of the section; the winners of the contest to be rewarded by the privilege of presenting their papers before the convention and receiving special mention in our proceedings. When this matter is presented I have on doubt it will receive your enthusiastic and favorable action.

After most searching inquiry by your Committee on the Book of Rules and Classification of Material, they have found little to warrant extensive changes. Such details as must be changed from time to time, with the advance in methods and practices evolved from our knowledge, have been thoroughly reviewed and modified, and are presented for your consideration and use in the conduct of your business where they may be applied beneficially.

The ability of the members of our group is strikingly illustrated in reviewing the initial work presented to you by the committee on Methods Pertaining to Purchases of Equipment and Large Material Contracts. This report contains most valuable information, is a distinct contribution to our knowledge of this subject, and should act as a guide in our contractual relations and studies of vital purchase statistics.

Those who study the report on Standardization and Simplification cannot but see its possibilities. To fail to

act upon its suggestions with intelligent effort and application will mean missing an important opportunity. Let it be remembered that each special item acquired by a railroad, regardless of the reason for ordering or rank of person ordering or the importance of the prospective use, is potentially a frozen asset of stock, whereas, items of common use in reasonable quantity are liquid. This splendid report is the direction marker to better store service, and outlines one preventative for acquiring items which may later become obsolete and discarded. We should look hopefully to the day when a standard item of one railroad is that of all roads, permitting liquidation on a common basis.

What has been said of standardization and simplification is equally applicable to the new subject of Materials Purchase Budget—a subject presented for the first time. One cannot but agree with the conclusion of the committee that it is too early to set forth specific methods of procedure for final accomplishment, but the five recommendations of the committee furnish sufficient points of contact with this subject to permit its rapid development in the stabilization of purchases and an indirect control over the total inventory values to be carried in anticipation of the needs of the user.

Uniform Accounting Practices Urged

The committee report on Uniform Observance of General Balance Sheet I. C. C. Account 716 offers a clear exposition in its summary of the replies received from the railroads to its very pertinent questions, and shows the large amount of work involved in the preparation of its recommendations. This is a timely subject, and no doubt the committee's work, as indicated from the several close votes within the committee, will receive the active discussion it deserves. Recent articles and editorials appearing in the railway periodicals have caused this subject to become one of current interest.

These published articles appear to encourage the working out of methods for comparing the inventory and purchases of all carriers, and reflects the trend of the times in that direction for the railroads as a group. The subject becomes one of current business discussion due to the progress of rapid transportation and the quick procurement. A study of the committee's report indicates clearly how futile such comparisons must be until the figures are compared on a uniform basis and reflect similar accounting practices. It seems to me they wisely recommend, as the first procedure, a division of the materials and supplies account of the general ledger sheet, so that the separation may permit of comparisons of the major groups included in the total in Account 716. Let us look forward with confidence to the time when some such division and uniformity in reporting material values will be made, and endeavor to ascertain any pertinent facts which may be given thorough consideration, unless harmful and misleading conclusions are drawn. This is necessary in order that the difference in the conditions surrounding the management of the purchases and protective supplies of the several railroads may not be disregarded.

It is impossible to match two or more things that are not similar, or perhaps related, but which may be reduced to a common term, as in this case, money value. These comparisons of purchases and inventories, prepared under varying circumstances, are misleading, unless they are on a uniform basis, which is not a fact at the present time and leads those using the information to draw improper conclusions. Let us look for a moment at a few of the different conditions which should be carefully weighed when considering the comparison of stock values of railways widely scattered throughout the operating territory of our country, such as: distance from source of supply; character of source of supply and its reliability; the importance of uninterrupted operation under all conditions; the extent to which construction and repairs are made by the railroad forces; the material manufactured by them for their own use; and the degree of traffic density and importance, requiring protection for continuous operation.

Here we see important differences which may have considerable effect upon the amount of materials and supplies that a railroad itself, or a group of roads should normally maintain, if the property or properties are to exercise prudent management in the conduct of its purchases and stores. It appears most urgent that our Division should adopt some such recommendations as your committee has offered, in order that those controllable differences between the carried may be eliminated, and uniform practices established by initiative and effort of our membership. To carry out these suggestions will require cooperative action with other departments and groups. This should be vigorously pursued by all, if progress is to be made in obtaining uniformity in vital statistics.

Authoritative statistical figures for 1925 have just been issued in the report of the Association's Bureau of Economics to its President. You will be interested in the brief of that section dealing with railway purchases. The director points out that: "The railways are generally regarded as among the largest purchasers of manufactured material and other products in the United States. Statistics of their purchases for 1925 fully support this belief."

It is shown that the railway purchases of bituminous coal in 1925, amounting to 129,345,000 tons, approximated 28 per cent of the total production in the United States.

The total purchases made directly by the railways in 1925, not including utilization by the railways of manufactured products and raw material used by construction, equipment and contracting companies, amounted to $1,392,043,454, an increase in money of 4 per cent over similar purchases in 1924.

Of this amount, $459,465,341 or 33 per cent, was spent for fuel; $419,254,603, or 30 per cent, for iron and steel products; $170,305,031, or 12 per cent, for forest products, and a miscellaneous remainder of $343,018,479, or 25 per cent. This miscellaneous group includes such larger items as ballast, lubricants, non-ferrous metals and their products, and cement. So, you may visualize the vast purchasing and stores control problem in these total yearly figures; for that which is purchased must be distributed, cared for and disbursed.

Noteworthy increases in 1925 over 1924 are found in the quantities of timber and lumber of 119,681,000 feet board measure; 400,451 gross tons of steel rail; 7,407,754 cu. yds. of ballast; 195,233,152 gals. of fuel oil and 2,953,480 tons of bituminous coal reported, in contrast to declines of 892,887 net tons of anthracite coal; 10,165,483 cross ties; 22,596,000 ft., board measure, of switch and bridge timbers. These enormous sums, most difficult to visualize, are in our care and custody. The size alone should be inspirational for our best and untiring efforts.

Let me urge that you take back to your work the best that you can obtain from our papers and discussions and apply them to your daily operations, even though they may require changes in your ideas and practices. Keep in mind that we must continue to lead in the economical management of the purchase, distribution and care of materials and supplies of the American railways, to the end that the owners, shippers and the public will be conscious of our ability to serve in a way that will wholeheartedly support the transportation of our industry.

Report of the General Committee

The General Committee of Division VI, A. R. A., corresponds to the board of direction of executive committee of other organizations. It is composed of 14 members, all of whom are selected for a period of two years by a vote of the membership from candidates presented by a nominating committee, according to an arrangement whereby seven of the members are selected each year, thus providing for rotation of office. It is from the constituency of the General Committee that each year's chairman and the vice-chairman of the division are chosen. This committee determines the work of the Association for the year and through one of its membership (W. W. Davidson this year) officiating as chairman of the committee on committees, selects the membership of all committees; it also supervises the work of the committees through the year, and, among other things reviews the committee reports prior to presentation. The feature of the General Committee's report of this year lies in the proposal to conduct an annual contest for articles on material handling to be prepared by younger men.

During the year, we received advice from the director of the Bureau of Standards, Department of Commerce, Washington, D. C., that the National Directory of Commodity Specifications was available. This directory is a classified and alphabetical list and brief description of existing commodity specifications.

Division VI, A. R. A., has continued contact with the Division of Simplified Practice in connection with subjects in which we are interested. The chairman of the Committee on Standardization and Simplification of Store Stock was delegated by the General Committee to attend conferences when the commodities under consideration might be of interest to this division.

A resolution adopted by the Joint Committee on the establishment of a central agency for joint inspection and testing of fuel and fuel saving devices was received and after careful consideration by the members of the General Committee, as well as the views of S. Porcher, chairman of our representatives on the Joint Committee, the following recommendation was adopted.

"The Division agrees to the resolution as presented but does not subscribe to certain of the means for carrying out that resolution as set forth in the general statement, conclusions, and recommendations."

For the purpose of clarifying the question of representative membership in Division VI, the General Committee suggests that the following clause be included in Rule 1 (b) of the Rules of Order:

"Representative members shall be those officers of railroads above the rank of stores foremen or head clerk in the purchasing department, having charge of purchasing and stores operations, who shall be designated by the executive officer of the member of the Association to serve in the Division."

Annual Contest

As a means of stimulating further interest among the younger members of the Division, it is proposed to conduct a contest by soliciting treatises relating to the handling of materials and supplies, both from the purchasing and stores viewpoint.

The results of such a contest should tend to keep the public informed as to what is transpiring in our particular phase of the railroad business thereby instilling confidence in the minds of the public in the ability of railroad officers to conduct transportations in the most economical and efficient manner which is, and always has been, the ultimate aim of the members of Division VI. Moreover, it would tend to bring into prominence the younger members who ordinarily do not have the privilege of attending the annual meetings of the Division, and obtain their views on the economical purchasing and handling of materials and supplies.

It is suggested that the annual contest be conducted under the following general rules:

1. The contest is to be known as "A. R. A. Division VI Purchases and Stores Contest."
2. The papers must deal directly with purchasing or stores matters.
3. Members eligible to be below the rank of assistant purchasing agent, or assistant general storekeeper.
4. The authors of the two best papers to be invited to present them at the Annual Meeting of Division VI and receive special mention in the proceedings.
5. The committee to select the best papers shall be composed of three members of the Division to be appointed by the chairman of Division VI.
6. The committee so selected to establish detailed rules and procedure under which the contest shall be conducted.

The committee is of the opinion that the superior officers of the departments can present this matter to the eligible contestants in such a way as to arouse enthusiasm and create an earnest desire in each individual member to have the best paper and the opportunity of attending our annual meeting.

Information: Frequently requests are received by members from various sources for information or cooperation on matters pertaining to purchasing and stores activities on the railroads. It is suggested that such inquiries be directed to the secretary for committees handling the particular subject.

The General Committee offers the names of the following members as candidates for the Committee on Nominations for the ensuing year: A. W. Munster, purchasing agent (B. & M.), Boston, Mass.; J. L. Bennett, purchasing agent (C. of G.), Savannah, Ga.; W. B. Hall, purchasing agent (D. & R. G. W.); J. G. Stuart, general storekeeper (C., B. & Q.); L. B. Wood, general storekeeper (S. P. Louisiana-Texas Lines).

General Committee: C. D. Young (Penn.), chairman; D. C. Curtis (C. M. & St. P.), vice chairman; W. Davidson (I. C.); W. S. Galloway (B. & O.); U. K. Hall (U. P.); W. A. Hopkins (M. P.); C. C. Kyle (N. P.); H H. Laughton (Sou.); L. Lavoie (C. N.); A. S. McKelligon (S. P.); J. F. Marshall (C. & A.); A. W. Munster (B. M.); .G E. Scott (M.-K.-T.); J. G. Stuart (C. B. & G.); C. B. Tobey (L. V.); and C. E. Walsh (Penn.).

Observance of Accounting Rules

Your general committee desires to crystallize the attention of the division upon the fact that in the five years ended December 31, 1924, the total material balance of materials and supplies as reported to the Interstate Commerce Commission, has been reduced from $767,000,000 in 1920, to a low of $570,000,000 at the end of 1924—a decrease of $197,000,000, or 25 per cent, a most creditable showing in view of all the circumstances relating to materials and supplies following the national emergency of the war.

The general committee has been impressed with the necessity at all times for a close surveillance of the acquisition of material by the railways and gives the following quotation from the Memorandum of the Carriers before the Interstate Commerce Commission as of strong interest to the membership on this subject:

"The amount of material and supplies, dictated by prudent management, that should normally be maintained, will vary as between carriers because of the difference in the conditions surrounding them. Whatever stock, however, is normally maintained by any carrier should be presumed to have been determined by the judgment of a 'prudent management,' which judgment should not be set aside in the absence of some compelling reason for so doing."

We are impressed by the fact that, as developed in report of the committee, Subject IV—Provisions for Uniform Observance of General Balance Sheet Account 716—Materials and Supplies, and Recommendations governing Charges to Material Stores Expenses, Paragraph 16—Special Instructions Operating Expenses, there is at the present time no definite basis of comparison of the Material and Supply Account 716 between carriers; and all efforts along these lines which may have been made fail of their objective because of the lack of a foundation upon which to construct such comparisons.

Close analysis of this committee report—Subject IV—clearly indicates why there is not a correct basis for comparison, and until the several differences pointed out in the body and recommendations of the report are cleared up, and uniformity in accounting methods and the many practices related thereto are established in reporting the values of materials and supplies, comparisons do not reflect the true conditions and fail to give the information sought.

We are of the opinion that the findings in this committee report are sound. Discussion on the floor of the convention may require some slight modifications in the detail recommendations made, but we have unanimously agreed that turnover, expressed in months' supply, thus far is the only equitable basis of comparison which can be made; and even this comparison cannot be made until the above mentioned difference in practices are harmonized.

We desire to state that it is obvious that in the management of affairs of the railways each carrier has his own problem, brought about by the operating conditions of each of the railways and their locations, and that when making comparisons of performance of the different roads themselves, or the general performance of

all the roads, consideration should be given to the character and geographical location of the property; the operation served and the operating conditions at the time the comparisons are made.

Therefore, the division membership is urged to give this committee report as finally adopted its strongest support, in order that uniformity in practices and reports among the several roads may be established.

The report of the committee was accepted as read:

Stores Department Book of Rules

L. T. Hoffman
Chairman

Since the adoption of a stores department book of rules in 1921, it has been the practice of Division VI to assign a committee each year to the work of revising and enlarging it. This work, involving as it does the formulation of definitions and principles of conduct and practice with much correlation of uninteresting detail, is largely of a onerous nature, but it is recognized as highly important to the stability and progress of the association's work. It is interesting that this year's committee is not only twice the size of previous committes handling this work, but that its constituency, including the chairman, is composed entirely of new members with the exception of two who served on the committee last year. The committee's report is a voluminous compilation which encompasses the entire book of rules and is characterized by the many revisions which have been proposed in existing forms for reporting information and by submission of new matter, the latter principally consisting of instructions in the handling of containers. Only the more important recommendations of the committee are presented below.

With the understanding that it is desirable for all railroad stores departments to follow certain essential fundamental practices in storekeeping, the committee has studied the Stores Department Book of Rules of April 1, 1921, and the subsequent changes, with a view towards suggesting corrections, additions and eliminations which are applicable to all railroads.

General

Bin Card Pricing System: In reviewing this subject, after inspecting it on the ground on railroads where this practice is followed, your committee finds such a diversity as to the systems followed, that we cannot at this time recommend any particular system, but advise that it has considerable merit and should be considered by future committees.

Handling of Containers: After a careful study of this subject and considering the large number of containers received on railroads which have a return value, we recommend that forms submitted herewith, and instructions as to their use, be adopted as standard.

Proposed Changes

Following changes recommended, as indicated by "Paragraphs" and "Part" in their respective location, in the Book of Rules:

Part 2—Use of Stock Book

Section 5—Material to be Included: Paragraph (a). Change to read as follows: Every item of material in store stock will be listed in the stock book whether purchased, transferred from other stores, manufactured at shops, or with manufacturers for repairs, except items of material ordered for special purposes. These need not be listed in the stock book at time of order. If however, they are not used and later returned to stock they will be taken up in the monthly inventories.

STOCK BOOK, FORM P & S-21-A.

Class			Class			Class			Class			Class			Class		
Page			Page			Page			Page			Page			Page		
Store			Store			Store			Store			Store			Store		
Date Counted			Date Counted			Date Counted			Date Counted			Date Counted			Date Counted		
DECEMBER			NOVEMBER			OCTOBER			SEPTEMBER			AUGUST			JULY		
Data 1 to 5	Quantity Ordered	Requisition No. and Date	Data 1 to 5	Quantity Ordered	Requisition No. and Date	Data 1 to 5	Quantity Ordered	Requisition No. and Date	Data 1 to 5	Quantity Ordered	Requisition No. and Date	Data 1 to 5	Quantity Ordered	Requisition No. and Date	Data 1 to 5	Quantity Ordered	Requisition No. and Date
1			1			1			1			1			1		
2			2			2			2			2			2		
3			3			3			3			3			3		
4			4			4			4			4			4		
5			5			5			5			5			5		
1			1			1			1			1			1		

Stock Book. Form P. & S. 21-A, as Revised

(d) Eliminate. (Made part of paragraph (a).)

Section 6—Monthly Inventories and Requisitions: Forms P. & S. 21-A, and 21-B. Have printed to provide space at top underneath "Store" line 3, to show "Date Counted." This provides for 4 lines at top instead of 3. In third column headed "Requisition No." the words "and date" be added. Heading for this column will then read "Requisition No. and date." (See Illustration.)

Paragraph (C). Insert "and date" immediately after requisition number in line 7. This sentence will then read as follows: "The requisition number and date will then be put in the column "Requisition number and date," as provided in section 4 (j).

Section 9—Surplus Material: Paragraph (b). Surplus material transferred to another store or shipped to another point not regularly supplied, or surplus material disposed of for other purposes, should be shown in red in column headed "Quantity Ordered," to distinguish the shipments from the consumption, and should not be used in figuring the amount used last..... days.

Form P. & S. 23-A.

REPORT OF SURPLUS, INACTIVE OR OBSOLETE MATERIAL

No.....

Date.....

Mr.....

Have the following material on hand at our Store for which we would like to obtain disposition: Store..... Section.....

DESCRIPTION (Give Drg. Ref. or Catl. Ref.)	Quantity on Hand	New or S. H.	Price in Accounts	Total Wt.	Value	Scrap Value

1. Book value..... Scrap value..... Difference.....
2. Interest..... Carrying charge..... Total.....
3. Received from..... Date.....
4. Purpose for which originally ordered.....
5. Purchase Reference.....
6. Date received.....
7. Amount on hand at time of ordering.....
8. Consumption at time of ordering..... At present.....
9. Reason for becoming Surplus or Obsolete.....
10. Remarks .....

Note.—Separate reports to be made for each item, so that questions 5, 6, 7 and 8 will be completely correctly.

Signed.....

Revised Form P. & S. 23-A, for Reporting Surplus

New Section 11—Form P. &. S. 23-A, "Report of Surplus, Inactive or Obsolete Material." (New Form submitted as illustrated):

(a) This form to be used by district and division storekeepers for reporting to the general storekeeper inactive and obsolete material on hand at their stores.

(b) General storekeeper to refer these reports to heads of departments interested, asking disposition they recommend be made of material listed.

(c) Show all information concerning the acquisition of the material, purpose for which special materials were ordered, and reasons for their not being used, conditions under which regular stock materials were ordered, and such suggestions as storekeepers and others are able to make as to disposition.

(d) By showing the total value, whether new or second-hand

and scrap value, it gives the head of the department condition of material, also value that will be charged to operating expense accounts if he approves scrapping.

(e) File of these reports should be kept in the office of the division or district storekeeper and the general storekeeper. This segregation of all materials of this nature on hand on the system serves as analysis of the material on hand account that is not otherwise available.

Part 3—Making Requisitions on Purchasing Agent and Receiving Material

Section 2—Form P. & S. 26. (See proposed revised form): Change to read as follows:

(i) Data.—Such data as desired by the purchasing agent, such as 1 to 4, part 2, section 4 (h) may be shown under each

Form P&S 26.

Reqn. No.....
No. Sheets.....
Sheet No.....

NORTH AND SOUTH RAILROAD

General Storekeeper Reqn. on Purch. Agt.

(Carbon copy to be used for G. S. K. file)

.....Storehouse Date.....192....

Ship Care of.....At.....

Item Number	Quan. Req'd	Unit	Description of Material and Data: On Hand	Due	Hold Reqn. for	Used	Days	Remarks

Req'n. Ref.....

Descp. Checked.....Quan. Checked..... Entered.....

Approved..... Signed.....
Storekeeper.

.....
General Storekeeper.

Revised Form P. & S. 26 for Making Requisitions on Purchasing Agent

item in description column. If it is desired to show estimated cost, date wanted, this information may be shown in description column following the item. Where purchasing agent requires requisition reference material is due on, requisition number may be shown following amount due.

(k) Add to this paragraph—"Description checked, quantity checked and entered. Initials of parties performing these operations should be shown."

Section 3—Form P. & S. 26-A. Old form P. & S. 26-A eliminated

Section 4—Form P. & S. 26-B, Receiving Book. Form revised and changed to form P. & S. 26-A. Change to Section 3.

(b) Change this paragraph to read as follows: "The headings, requisition number, sheet number, number of sheets, storehouse,

Form P&S 26-A.

NORTH AND SOUTH RAILROAD
Storehouse Receiving Book for General Storekeeper
Requisition on Purchasing Agent.
Copy of Req'n.

Reqn. No.....
No. Sheets.....
Sheet No.....

RECEIVING RECORD

.....Storehouse Date.....192...
Ship Care of..... At.....

Item Number	Quan. Req'd	Unit	Description of Material	WAY BILL CHECKING: Way Bill Station	Way Bill Date	Way Bill Number	Car In'd	Car Number	Package No.	Package Kind	Weight	Freight Charges	STOREHOUSE CHECKING: Date Rec'd	Quan. Req'd.	Remarks

Reqn. Ref.....

Revised Form P. & S. 26-A for Receiving Material

date, ship care of, at, item number, quantity ordered, unit, description of material, and requisition reference will be a carbon of the requisition on the purchasing agent Form P. & S. 26.

Section 5—Form P. & S. 26-C, Storehouse Invoice Record. Form revised and changed to form P. & S. 26-B. Change to Section 4.

(b) Change this paragraph to read: "The headings as to requisition number, sheet number, number of sheets, storehouse, date,

Form P&S 26-B

NORTH AND SOUTH RAILROAD
Storehouse Record of General Storekeeper
Requisition on Purchasing Agt.
Received

Reqn. No.....
No. Sheets.....
Sheet No.....

.....Storehouse Date.....192...
Ship Care of..... At.....

Item Number	Quan. Req'd	Unit	Description of Material	Freight Charges: Amount	Freight Charges: Allowed or Deduct	Receiving Record: Date	Receiving Record: Quan.	INVOICE RECORD: F.O.B.	Ordered From	Date	P.A. No.	Quan.	Amount Totals	Net	Inv. Fac'd	Remarks

Req'n. Ref.....

Revised Form P. & S. 26-B. for Invoice Records

ship care of, item number, quantity ordered, unit, description of material and requisition reference, will be a carbon copy of the original order P. & S. 26.

Section 10—Direct Orders on Dealers. Change to Section 9. Change last sentence of paragraph (e) to read: "The order in all other respects will be handled as provided in part 3, sections 2, 3, and 4."

Part 8—Material Issued

Section 7—Blanks: Change paragraph (e) to read as follows:

(e) Form P. & S. 81 is for use by storekeepers in reporting

Form P&S 81 Sheet No.....

REPORT OF SCRAP FOR SALE

Mr.....
(Purchasing Agent)

.....192....
(Date)

We have on hand at.....
the following scrap.

These quantities are in addition to any previously reported.

.....
(General Storekeeper)

Item No.	(Classification)	Unit	Quantity	Sale Order No.	Remarks
1	Arch Bars and Transoms—Iron				
2	Arch Bars and Transoms—Steel				
3	Axles—Steel Car and locomotive, 6 inches diameter and over at Center.				

Revised Form P. & S. 81 for Reporting Scrap

to the general storekeeper and by the general storekeeper in reporting to the purchasing agent, by A. R. A. classification, quantities of scrap on hand for sale. Quantities reported on each report should be in addition to any previously reported.

(See proposed form P. & S. 81 as illustrated. Balance of items as adopted by division VI, A. R. A., to be printed on this Form.)

Part 11—Handling Containers

Section 1—Receiving: (a) When material is received in returnable containers, the numbers of such containers are shown on the "Material Received" tally.

Form P. & S. 151.

NORTH AND SOUTH RAILROAD Page.....

Record of containers received from.....

(1) P. A. Order Number	(2) CONTAINER: Date Rec'd.	(3) Contents	(4) Kind	(5) No.	(6) ISSUED: TO	(7) Date	(8) Req'n. No.	(9) Date Returned to Store	(10) Date Returned to Owner	(11) Date Credit Received or Final Disposition in Lieu of Credit Obtained

New Form P. & S. 151 for Handling Containers

(b) When containers are not numbered by shippers, number should be applied by the Stores department.

(c) Information required on Form P. & S. 151 in column headed (1) to (5) inclusive is entered from the "Material Received" tally.

Section 2—Form P. & S. 151. (Form submitted as illustrated): (a) "Record of Containers Received from." In this space will be shown the name of the firm who shipped the container and to whom it will be returned.

(b) Column (1)—Purchasing Agent's order number will be shown in this space.

(c) Column (2)—The date the container is received will be shown under this heading.

(d) Column (3)—In this space the contents of the container will be shown.

(e) Column (4)—The kind of containers; i.e., whether steel drum, wooden barrel, cylinder, etc., will be shown in this space.

Form P. & S. 152

NORTH & SOUTH RAILROAD

ADVICE OF SHIPMENT OF CONTAINERS TO BE RETURNED

.....192...

Mr.....

.....

File No.....

You will receive on Reqn.....date.....192...

Drums
Reels numbers.....
Carboys
Cement sacks

When empty please return to.....

.....Total Value.....

The prompt return of empty containers is important. They are charged to this Company until returned. When returned, mail copy of shipping notice covering to the undersigned.

.....

(Title).....

New Form P. & S. 152 for Shipping Containers

(f) Column (5)—The number of the container will be shown in this space.

(g) When the container is forwarded another store or to the operating department, the name of the store, station, section, or party consigned to, together with the date and requisition number, is shown in columns (6), (7), and (8).

(h) Date received back at shipping store is shown in column (9).

(i) When returned to the owner, the date is inserted in column (10).

(j) Date credit received or final disposition in lieu of credit obtained is shown in column (11).

Section 3—Form P. & S. 152. (Form submitted as illustrated): (a) This form is mailed to the party to whom containers are shipped and may provide for the return of the empty container direct to the owner if so desired.

Form P. & S. 153.

CONTAINER TRACER

R. R. R.

Mail To

.....

.....

.....

TEAR OFF

Reels No.
Drums No.

.....

Shipped to you at Date

Requisition No. They have been outstanding

Days. Rush return to

At

Remarks

.....

Fill in other portions of this card with return advice and mail promptly.

Return Advice.

Reels No.
Drums No.

Were returned to At

Date W. B. No.

Remarks:

.....

.....

.....

Signed:

Form P&S 153 CONTAINER TRACER
Reversed R. R. R.

Mr.

.....

.....

(OVER)

New Form P. & S. 153 for Tracing Containers

Section 4—Form P. & S. 153. (Form submitted as illustrated): (a) To be used as a tracer for containers long outstanding, the form is self-explanatory.

Committee: L. T. Hoffman, traveling storekeeper (U. P.), chairman; V. N. Dawson, district storekeeper (B. & O.); J. H. Ellis, storekeeper (C., B. & Q.); J. S. Genther, general storekeeper (L. & N. E.); B. C. Hart, division storekeeper (N. Y., N. H. & H.); E. Harty, assistant general storekeeper (S. P.); J. C. Jackson, general storekeeper (G. T.); T. H. Ryan, assistant purchasing agent (Wabash); E. J. Lamneck, stationery storekeeper (Penn.); C. W. Yeamans, purchasing agent (C. & W. I.); W. A. Hopkins, general purchasing agent (M. P.); chairman ex-officio.

Discussion

It was moved and seconded that the proposed changes in Sections 4, 5, 6 and 9 of Part 2 of the Book of Rules be adopted.

D. H. Reed (Sou.): Section 5, says "Except items of material ordered for special purposes." What special material has that reference to?

Mr. Hoffman: The committee had in mind material ordered for special work order jobs, specific items of material for a specific purpose that in all probability could not be used for any other work.

Mr. Reed: It seems to me that such a wording leaves it open for a stock clerk or others having to record items of that kind, to leave them off of their stock books. I would suggest cutting it out altogether and putting everything in the stock book.

Mr. Hoffman: Isn't that taken care of in the paragraph where it says, "If, however, they are not used and later returned to stock, they will be taken up in monthly inventories." We had in mind that we would get them in afterwards if they had not been used in a reasonable time.

The committee's thought was, if your stock books include all items of material that are special, the stock books will be hard to handle, and you will go to a great deal of expense in writing up items. There is a great deal of dissatisfaction expressed by section storekeepers or stockmen in handling stock books so large and having items in that they don't use. We did not feel that we ought to go to the extent of saying that every item ordered, regardless of for what purpose, should be included in the stock books, until such a time as it was determined, by their not being used, that they would have to be made standard book items and should be inventoried.

Chairman Young: Is that satisfactory?

Mr. Reid: It is.

There being no further discussion, the motion to adopt Sections 4, 5, 6 and 9 of Part 2, was put to a vote and carried, following which all other proposed changes of the Book of Rules were adopted without discussion, except those in Part 11, which it was voted to add to the Book of Rules.

H. C. Stevens (Wabash): This question of containers is a very important one and should form a part of our Book of Rules, but the question of what we are going to spend for records in connection with it seems to me questionable. Nearly all the railroads have a complete form of receiving reports. If we get a complete receiving report and we follow up for the return of these foreign containers as suggested in form P & S 152, I question form P & S 151. It is going to cost money to make that out. *I move that form P & S 151 be eliminated.*

C. B. Tobey (L. V.): I can't agree with Mr. Stevens.

F. McGrath (B. & M.): I wonder if Mr. Hoffman has encountered situations where the containers have been of more benefit to the railroads than we would get out of them if returned. There are some containers where the returnable value is very low, where the railroad company gets a higher value if they ship out some of their scrap material in them.

Mr. Hoffman: We have considered that. Carbide cans, powder cans, boxes of various kinds, (sometimes these boxes and containers have large materials of a return value) can be used to better advantage by the railroads. The Committee, however, did not deem it advisable to mention that in this proposed new part, believing that it was something that should be worker out by individual lines.

L. C. Thomson (C. N.): Section one of Part 11, I presume, refers to material received in containers at storehouses. I would like to know what the committee

has in mind for material shipped out on the line in containers that have a value.

Mr. Hoffman: Practically for a follow-up proposition. If you have a number on the container going out to a section gang, or a section foreman, or a B & B gang, it helps very materially in getting back the container. If you simply say, "we shipped you one container," you have losts its identity.

Mr. Thomson: That is all right where the container has a number on it, but how are you going to get the number on the container that is shipped direct to the fellow on the line?

Mr. Hoffman: That was a subject that was discussed, but we did not arrive at any definite manner of handling it.

C. D. Baldwin (Bangor and Aroostook): We have been paying strict attention to containers as outlined in this report. I don't mean that we are handling them in exactly this way, but we are trying to make sure that the containers all get back, and that we get our money for them. We put the purchasing agents orders number on each barrel received. Then whenever it is investigated, we can tell just when and where it came from, how much we paid for it and where it should go. I would just like to suggest that if Form 152 was used when the container was sent out, and there was no number likely to be put on that barrel, a note might be put at the bottom saying, "Please mark on this barrel order number—," and give a number to be put on it.

This committee has done a good work in bringing this matter before us, and if, as he stated, there are some large railroads that are not giving it careful attention now, I believe it is time they did, because there is a great deal of money involved in containers.

There being no further discussion the motion to adopt Part 11 was put to a vote and adopted whereupon the entire committees report was unanimously adopted and the committee excused with the thanks of the Association.

Bin Cards on the Canadian National

By E. D. Toye

General Storekeeper, Canadian National, Central Region

E. D. Toye

The stock in a modern store house today is divided into sections, which include the maximum number of items of stock which an efficient stockkeeper can reasonably be expected to supervise and control. The foundation of his stock control system is his stock record, and its efficiency is largely governed by its accuracy. If a system is not provided permitting him to accumulate accurate information to be recorded in his stock record he cannot possibly have an efficient stock control system. In our endeavor to eliminate as far as possible inaccuracies in our stock record and our attempt to impress stockkeepers and their helpers with their responsibilities, the bin card, was put into operation.

The stock book reflects the stock situation at a given date as the stock book is only posted monthly; the bin card gives the stockkeeper up-to-date information at any time during the month. The bin card shows the accurate technical name of the article, its actual location, that is the section, compartment number and bin number in which it is located, the stock book folio on which it is recorded, the classification of the article, its unit price, the quantity on hand at the first of month, the receipts and issues during the month, the quantity outstanding on requisition and the requisition reference. It also shows the average weight of grey iron, malleable and steel castings. The description, location and classification of the article is invariably constant. The quantity on hand, arrived at by actual count at inventory date, is shown on the bin card, and the receipts and issues are recorded throughout the month and balanced at the end of each month and the new total of quantity on hand is brought forward.

It is recognized that, without unwarranted expense, it is a physical impossibility to take an actual inventory of stock on hand monthly, but stockkeepers and helpers are expected to check the balance on the bin card with the stock on hand by actual count, weight, or measurement, of all active items of stock they control at least three times a year. With items of stock of which large quantities are issued throughout the month, the balance on the bin card is checked from six to eight times a year. The bin card immediately identifies the items of stock from which there have been no issues since the last checkup, eliminating the necessity of expending any labor in verifying by actual count whether or not there has been an issue, and permitting the stockkeeper or his helper to concentrate his checkup on only those cards that show an issue. When the balance on the bin card has been verified by actual count a double line is drawn across the card showing that the balance on hand has been arrived at by actual count so that stores officers and inspectors as well as the stockkeeper, upon examining the card, immediately learn the last date the balance on hand was verified. Where an error has been discovered on the bin card it is reported to the storekeeper or his assistant who conducts the necessary investigation and makes the proper correction both on bin card and in stock book.

It is to be understood that the bin card is not an accounting feature, but a stock control feature providing the stockkeepers with an up-to-date record of each item of stock, which information is transferred to the stock book at the end of a 30-day period.

The latest available price is the price used in charging out issues. Extreme care is exercised through co-operation with the purchasing department in seeing that merchants' invoices are referred to the stores, checked and certified and returned to the purchasing department at the earliest possible moment. Invoices covering material received into stock are not only checked with the receivers' record but they are referred to the stockkeeper concerned who must also certify the actual receipt of material taken into stock. The unit price of the item or items of material covered by the invoice, including freight, express, cartage, duty, inspection charges, etc., has been worked out and recorded on the back of the invoice in the office. In checking up this invoice in order to certify to receipt of goods the stockkeeper refers to his bin card and at the same time checks the unit price shown on the bin card with the price shown on the invoice. It is by this method that the prices on the bin card are kept up to date. Invoices are referred to the stockkeeper by messenger and are immediately handled by him and returned to the office.

The bin card serves to identify accurately the material which it covers. It is a directory as to the location of the record of the article in the stock book. It informs the employee the classification of the article and its unit value. It also gives up-to-date information as to the quantity on hand, quantity outstanding on order, if any, and requisition reference. It permits the issuer to accurately price material. The material is taken out of the bin and the issue is recorded on the card, the price is recorded on the requisition or issue slip, so that at the end of the day the complete issues for the day have been accurately priced and turned over to the office.

Undoubtedly the outstanding benefit to be derived from the bin card, apart from its value in accumulating information for the stock record and conveying up-to-date information to the stockkeeper, is its pricing feature. It is apparent to us that it is a dangerous practice to price our issues, particularly from technical stock, at any time other than at the time the issue is made. A price book or price card record is essentially compiled from merchants' invoices or other records which reflect the proper technical name of the article, and where pricing is done in the office the work is invariably performed by a clerical employee who has a very limited knowledge of material. He therefore can only be expected to price accurately those requisitions on which are shown the correct technical description of the material, or a description which is in accord with the information he has transcribed from the merchants' invoice into his price book. Those of us who have filled the position of price clerk still remember the large number of shop issue slips and requisitions which were turned over to us to be priced, many of which bore names of material which were not recorded in our price books, and a large number also which were illegible. We sorted out these slips that were quite readily identified and priced them and put to one side the remainder for which we could not locate prices. These accumulated until, realizing that we would be severely censured for accumulating such a large number of issue slips unpriced, we

reduced the number by the convenient system of guess work, and while we felt guilty following this procedure there was the satisfaction that it was the best that could be done under the system in force.

It is recognized therefore that users of material will continue to describe improperly their requirements on requisitions, particularly items of a technical nature, and it is anticipated that we will still continue to receive shop issue slips unintelligible to a clerical man in the office, so that some system must be provided whereby our issues are accurately priced and the job on which the material is used is properly charged. For this reason the price is shown on the bin card, and regardless of whether the description is accurate or not, or whether the requisition is intelligible to an employee later, the price shown on the issue slip is always the unit price of the material issued.

It is to be understood that this system of pricing eliminates the expense of price clerks in the office as the only issues which are not priced are those issues of special material which we have not previously carried in stock and for which we have not received invoices at the time the issue was made. These instances are few and the issue slips and requisitions are held in the office until the invoices are received, when they are priced. At our larger shops where we previously employed three or four price clerks there is now only one employee, part of whose time is engaged in the pricing of our issues, all other pricing being done by the stockkeeper and his issuer.

At one time the most difficult and lengthy operation in connection with the preparation and completion of our annual inventories was the pricing. Today the inventory is completely priced at the same time the quantities of stock on hand are recorded as the prices on the bin card are always up to date and available.

Showing the unit price of the article on the bin card has resulted in a saving in the consumption of material. Repeatedly, instances are brought to our attention where users of material have submitted requisitions for expensive material and upon being appraised of its value by the issuer the user has agreed to reduce the quantity on the requisition. It thus creates an appreciation of the value of material and contributes to its more economical use not only by the stockkeeper and issuer who control the stock but by the employee who uses the material.

We have had outstanding cases where we have received substantial credits covering repair parts to technical and patented equipment after stockkeepers have drawn to our attention the price of certain repair parts for which we have been exorbitantly charged. The stockkeeper was impressed because he had before him the price as well as the article. These parts were ordered under piece number and technical name which did not convey to the purchasing department sufficient information for them to realize their actual value.

The bin card with the information it reflects is of splendid assistance in checking up stock in store houses by officers and inspectors, as you have up-to-date information regarding any individual item located immediately with the item of stock.

Discussion

In the absence of Mr. Toye, his paper was presented by L. C. Thomson (C. N.)

U. K. HALL (U. P.). The statement was made in the paper that it was not possible or advisable to count material monthly. Those of us who have not progressed as far as the bin tag feel that the operation of our stores department depends upon knowing monthly the actual materials on hand. If this statement is 100 per cent correct, possibly we could depend upon the bin tag, but I still feel that the essence of successful store-keeping is the counting once a month of the materials on hand and having the actual results listed in our stock books.

D. E. PETERSON (B. & A.): I would like to ask Mr. Thomson if he finds many variations between the bin check and the stock-book check on the physical count.

Mr. THOMSON: We find that it is not practical to haul out steel or to measure it up or to weigh it, etc. There is not enough in it. There are never enough variations to make any material difference as far as stocking is concerned. On the Canadian National stock is taken three or four times a year. The Lehigh Valley goes over its stock eight times a year when they are not too busy. It makes an actual check with the cards and draws a line across the card, which indicates a balance has been made, an actual balance with stock on hand.

We only concentrate on cards that show issues. If there are not any issues, we take it for granted that the stock is the same, although we only have the human element to deal with. We have found that some men are not as conscientious as others and not as careful in their work. For that reason, we have found issues have been made that have not been recorded by the issuer, but such cases are few.

MR. THOMSON: Not very much. We have our or not the bin card record varies much from the stock book record.

MR. THOMPSON: Not very much. We have our inspectors who check the stores in detail on an average of once in three months. An inspector checks in detail each store, and we do find errors. Every visit I make to a store, I pull out the cards, and as far as the eye will check with the stock on hand, I made a check, and to my knowledge in the last year I only found one card out in one store. Of course, I did not make a detailed check. The inspectors tell me, and they show on their reports when there is a difference between the card and the stock, and there are a number of them.

J. G. STUART (C. B. & Q.): You speak of the difference between the stock card and stock book. Did I understand you have two records?

MR. THOMSON: Yes, we have the tag which is in the bin. We do not carry a stockbook now in our most up-to-date stores. We have a card system instead of the stockbook which we think is better.

MR. STUART: Then you have two records?

MR. THOMSON: Yes, but that stock record is only posted once a month, while the bin card is posted at every operation.

MR. STUART: Where is that stock card posted from once a month?

MR. THOMSON: From the card to the stockbook.

MR. STUART: If the count has not been taken, then your stockbook would only reflect your bin tag?

MR. THOMSON: In posting the stockbook each month, a balance must be made, struck on the card but not an actual balance with the stock. That actual balance with the stock is made about six or seven times a year.

MR. STEWART: Most of us find that it is not necessary to keep the two records. If one is kept accurately, it should not be necessary to keep the other.

MR. THOMSON: Suppose a foreman comes into your store to the stock-keeper and he wants to know what material you have on hand, where do you go? To your stockbook?

MR. STUART: Yes.

MR. THOMSON: Your stock book does not show you the condition 30 days after you have taken stock.

MR. STUART: Near enough.

MR. THOMSON: Thirty days is near enough. The bin card tells us accurately or within a unit or two just what we have got.

MR. STUART: Couldn't you go to the bin just as well as you go to the bin card? If your material is properly piled, you could tell instantly how much you had.

MR. THOMSON: If it was something you had to measure or weigh or pull out of racks, or if you had a huge stock of it, it would take time to do it, whereas with the bin card you could do it in a minute.

MR. STUART: Not if it was properly piled.

C. C. KYLE (N. P.): In the Canadian National tray system do the trays carry the counter of material?

MR. THOMSON: Yes, in units. A tray may have a unit of 50, and so on. We tray the material as far as practical. In piling arch brick or other commodities which are piled outside, we pile them as far as possible in units.

MR. KYLE: Doesn't that give you an accurate count of the material?

MR. THOMSON: In the units, but it will not tell

you what is in a unit without counting it. Then of course there is not only the counting feature. We figure that we get many advantages in having this bin card by the pricing feature.

W. Davidson (I. C.): You said you have from one to five sections on an average taken care of by one stock-keeper. How many men in a section, say the mechanical section, besides the stockkeeper in charge?

Mr. Thomson: In a section of technical materials such as air-brake lubricators, stokers, Diesel engine parts, etc., there are four assistants and a stock-keeper.

Mr. Davidson: You have cut off how many price clerks?

Mr. Thomson: Three.

Mr. Davidson: I have a similar section with only one man and one assistant. When you are cutting off three price clerks, you will increase your force in your section. Maybe you get more efficiency.

Mr. Thomson: We would not attempt to put out the shipping that we do with one or two men even if we did not have bin cards or a stock record. It would take probably four men to handle that shipping and the receiving of material, putting it on shelves, and issuing it to the dumbwaiters which feed the counters, and so on.

We did not take on any extra help to inaugurate the bin cards system or the pricing system which we now carry on in the stores. We cut the price clerks out of the office, and we are experimenting now in some of the busy sections with a clerk in the section to write the requisitions and do all the clerical work for that section; that is, the heavy sections.

W. F. Morehead (I. C.): How do you handle the transfers between stores or divisions?

Mr. Thomson: Just the same as shipments going outside. The stock-keeper prices everything that goes out of the section.

O. Nelson (U. P.): You use the latest price on your bin card regardless of what the previous price might be?

Mr. Thomson: That is right.

Mr. Nelson: Has not that a tendency to bring about fluctuation in your annual inventory?

Mr. Thomson: It may bring about a slight fluctuation.

Mr. Nelson: Would not it be possible to regulate the prices so that you would have the actual cost of the material in the bin?

Mr. Thomson: We thought of that, but our audit office was satisfied with any adjustment we might make by carrying it on and using the latest invoice price.

Classification of Material

E. H. Hughes
Chairman

Several years ago Division VI undertook the development of a standard method of classifying all the various materials and supplies that are used by railroads and eventually agreed upon a standard according to which every item of stock on the railroad is given one or another of 52 classifications. Since the adoption of these classifications by the American Railway Association as recommended practice, the Association has made an effort each year to determine the extent of their use for handling and reporting material on different railroads and to study suggested changes and revisions with a view to perfecting them as a practical and useful element in stores control. This year's committee, with a constituency entirely different from that of the previous year, except in one case, has made the interesting disclosure in its report that 45 out of 69 roads questioned during the year are now using the classification, while others are preparing to inaugurate it. The chairman, E. H. Hughes, is a former member of the general committee.

A canvass was made of 69 Class 1 railroads in the United States and Canada to ascertain the number using the A. R. A. Standard Material Classification and to ascertain further if other lines anticipated its adoption in the near future, soliciting also recommendations as to needed changes, additions, eliminations, etc.

A recapitulation indicating the results of this canvass is given below:

	Roads	Total Mileage	Percent to Total
Using A. R. A. classification	45	123,754	50.98
Using own classification	15	84,437	34.78
Using A. R. A. classification in part	3	18,098	7.46
Using A. R. A. classification for accounting	1	8,722	3.59
Not replying	5	7,743	3.19
Total	69	242,754	100

Fifteen lines reported using their own material classification to your preceding committee. There has been no change in the status of this condition.

Consideration was given to the establishment of a class or sub-division for train control materials. However, after careful consideration it was felt by your committee that the establishment of a separate class or sub-division for these materials would be harmful and confusing inasmuch as the various component parts are in some cases common to other usages and it recommends that the various parts be allocated in classes 2-A, 22, 23-B and 25-B, as the classification heading may indicate.

There has been some agitation for the elimination of sheet iron and steel from Class 15 and the placing of all sheet iron and steel in Class 16 regardless of gage.

After considerable discussion and in view of the suggestions made to your present committee as well as prior committees and considering further the fact that the majority of roads carry or store all sheet iron and steel No. 16 gage and up (with the possible exception of galvanized and jacketed stock), together physically,

The Union Pacific is Among the 45 Roads Which Use the Standard Classification, this Illustration Showing How Racks are Marked to Correspond

your committee recommends that the following changes be made in the headings of these classes:

Eliminate from Class 15, the words (sheet iron and steel under 3/16 in.), making revised heading read as follows:

15. Bar iron and steel, spring steel, tool steel, unfabricated rolled shapes, wire netting and chain, except light coil.

Eliminate from Class 16 the words "3/16 in. and heavier," revised heading to read as follows:

16. Boiler, firebox, tank and sheet iron and steel, all kinds.

Your committee could develop no general criticism of the present classificaiton among the various lines canvassed and it concurs in the general recommendations made by the preceding committee with respect to the optional sub-division of the primary classes, etc., believing that the present classification is comprehen-

sive enough to include all new devices now installed or in the experimental stage and that no new classes should be added at this time.

Committee—E. H. Hughes, general storekeeper (K. C. S. R.), (chairman); L. J. Ahlering, general storekeeper (C. & E. I.); Hal D. Foster, storekeeper (C. B. & Q.); W. M. Hinkey, supervisor of materials (B. & O.); J. U. King, assistant general storekeeper (A. C. L.); D. H. Phebus, chief clerk to general storekeeper (C. M. & St. P.); W. M. Portlock, general storekeeper (S. A. L.), and J. F. Marshall, purchasing agent (C. & A.), (chairman ex-officio).

Discussion

The motion was made and seconded that the report be accepted.

J. C. Kirk (C. R. I. & P.): I can see no good reason for advocating this change in the classification. I can think of several apparently good reasons why we should not change it. First, it is the practice on most railroads to store their material according to material classification. That has many advantages in taking monthly stocks and in handling. The second reason is that it means a change in the forms and the re-education of all of our employees. The third reason is that different crafts use different materials. The steel under $\frac{3}{16}$ in. is used by the tin shop; the material over $\frac{3}{16}$ in. is used in the boiler shop by the boiler makers.

Material is not shipped together. Heavy steel is usually stored outdoors under cranes, and light material, such as galvanized iron and light sheets, are sent to the storehouse and stored indoors.

A few years ago we changed the classification and when we came to the convention the next year practically none of the railroads were using the A. R. A. classification. We have let it run along now for two or three years with no changes and 65 per cent. of the roads that were canvassed by the committee are now using the A. R. A. classification. It seems to me that we ought to let it alone, and I would like to so *amend the motion that no change be made in the classification.*

Motion to Amend Seconded

J. T. Kelly (C. M. & St. P.): I am not in accord with the amendment. While it is true most of us store light sheets inside the storehouses, we store our fire-box sheets outside in some rack. We also store bar iron and I believe that we should progress. It may take a little time. We may have to change our stockbooks.

Mr. Davidson: I would like to ask Mr. Kelly if he is not trying to get his material in one class?

Mr. Kelly: Yes.

Mr. Davidson: Why can't he put his light sheets under cover in that particular section?

Mr. Kelly: We have got to have bar iron adjacent to the forge shop, and we try to have sheet matal near the place where it is used. Our light sheet is used in the tin shop, and we get it as close to that as possible.

Mr. Kirk: The fact that we have not changed the classification for the last two or three years has made for progress in its adoption, and I think we should leave it alone.

C. B. Tobey (L. V.): We are following the A. R. A. classification on our road probably about 80 to 85 per cent., and we are now and have been for some years storing bar iron and steel and sheet iron and steel in just exactly the same way that the committee now proposes. We think it is a good plan.

W. F. Jones (N. Y. C.): The gentleman from the Rock Island has been making some remarks about the character of material in certain classifications. There are only about 15 items in the 316 that are concerned in this discussion. I support the report of the committee to include the 15 items under classification No. 16.

Mr. Stuart: I agree with the committee. It is a case of bad judgment to attempt to separate things by sizes. It is natural for a price clerk to let everything that is sheet steel go in one direction. I think the committee is correct and we should accept their report.

Mr. Hughes: Most all railroads store light steel sheets together. I do not believe that there is any railroad that carries $\frac{3}{16}$-in. or No. 8 steel in their storeroom. Tank steel, blue annealed sheets, and fire-box plates are practically stored together. About 22 railroads recommend it. If we adopt that practice we will be getting our stockbooks lined up with our physical arrangement.

The amendment was to revise the report was lost where upon the motion to adopt the report as read was put to a vote and carried.

Materials Purchase Budget

U. K. Hall
Chairman

The materials purchase budget has the distinction of being an entirely new subject for the consideration of the Association this year. Its assignment to a committee definitely reflects the Association's responsiveness to discussions in previous meetings and elsewhere on the possibilities of direct budgetary control of expenditures for material, as a means of reducing costs to railroads both in the procurement and handling of supplies as well as in the promotion of other economies which it has been suggested might flow from such a practice. The subject is a live one and the question equally important, as a result of which the committee's report is assured of careful study. Realizing this the committee under the leadership of U. K. Hall, a past chairman of the Association, has approached the subject cautiously. But it has seen fit to make several specific recommendations as a basis for further study. These recommendations are presented in the following remarks of the committee.

Material expenditures, which are a substantial proportion of the operating expenses, should be regulated by control before or at the time of purchasing, instead of attempted regulation after materials have been received in store stock.

The necessity for the control of operating expenses through the medium of an approved budget, on many large railroad systems, has come to be recognized. The use of such a budget in the mechanical, maintenance of way and conducting transportation departments, necessitates the preparation of a program of work extending over the entire period covered by such budget.

Many railroads are operating on the above plan as far as their pay roll expenditures are concerned, for the departments affected, but are overlooking the fact that approximately 35 per cent of their entire operating expense is attributable to material and supplies. Where a definite study has been made, it has developed that there is a very consistent ratio between material expenditures on the various roads, and the total operating expenditures. The realization of this ratio emphasizes the necessity for a general operating budget if labor and material are to be coordinated and the amount of money invested is to be controlled.

While a few roads are installing a materials purchase budget, no specific method or procedure has as yet been fully developed.

Although great advances have been made recently in methods of controlling stock investments and service, there is much that can be accomplished by a further coordination of control of labor and material expenditures which will contribute very materially to ultimate reductions in operating expenditures.

Realizing that this is a new subject and still in course of development, the committee recommends:

1. That the head of the purchasing and stores department ascertain the total operating budget for a stated period.
2. In addition thereto, that all available data be examined to obtain information for anticipating future requirements.
3. That each road make a study of the ratio existing on their individual property based on past performances between their total operating expense and total pay roll expense, as against total expenditures for materials and supplies.
4. Applying this ratio against the authorized expenditures for the total operating budget will give the purchasing and stores department the approximate amount of money necessary for the period covered by this budget to invest in materials and supplies.
5. That the subject be continued and passed on to a committee for further investigation during the coming year.

Committee: U. K. Hall, general supervisor of stores, (U. P. S.), chairman; M. J. Collins, general purchasing agent (A., T. & S. Fe); D. C. Curtis, chief purchasing officer (C., M. & St. P.); R. J. Elliott, purchasing agent (N. P.); R. C. Harris, assistant to stores manager (Penn.); A. W. Munster, purchasing agent (B. & M.), and M. J. Wise, assistant to vice-chairman (S. P.).

Discussion

(The report, being short, was read by the chairman, U. K. Hall (U. P.), whereupon it was *moved and seconded that the report be adopted.*)

W. P. Ditto (N. Y. C. & St. L.): Paragraph 4 of this report reads as follows: "Applying this ratio against the authorized expenditures for the total operating budget will give the purchasing and stores department the approximate amount of money necessary for the period covered by this budget to invest in materials and supplies."

I can't see the value of that to the purchasing and stores department, as they have nothing to do with the control of expenditures. If they are going to build a new culvert and require cement, stone, and sand, it is called for in the requisition, and the purchasing agent's job is to buy it. I don't know how the amount of money we are going to spend can be controlled by the purchasing department or the stores department. That is controlled higher up than the purchasing and stores department.

Surplus Material

D. C. Curtis (C. M. & St. P.): During the days of government control, we discovered a small amount of surplus material. Since that time we have applied ourselves as diligently as we could to try to reduce that balance. In other words, we are trying to help something after it has happened. We have developed the stockbook, classification of material, and all of these things to help us arrive at a figure in our balance sheet that will not be excessive. There have been articles and editorials in the different technical magazines in regard to our stock balances. The thought came to some of us that it was better to try to control this before it happened rather than after it happened. As stated in this report, all you people practically have pay-roll allotments, that is, a certain amount of money allotted for pay-roll, and this is not exceeded. It has been stated and shown many times that there is a definite relation between material and pay-roll, and yet no one has tried to connect up the two factors that control operating expenses.

Cost and Selection of Material

Someone must think ahead of time that you are going to use an injector on a locomotive. Somebody must think ahead of time that you are going to put a board in a floor of a depot. Somebody must think ahead of the time that you are going to provide a deflector bar for a signal some place that is going to be taken out of operation. Your stockman is the controlling factor at the present time who does that without regard to the amount of money that is going to be tied up in this transaction. He is not conversant with the financial problems that are confronting the railroad. The only pressure that is brought to bear upon him at the present time is by the user of the material, who wants it on hand when he wants it, where he wants it, and how he wants it, regardless of any expenditure that may be required. There should be some pressure from the other side of the fence, some connecting link between the amount of money that we are going to have to spend. Then after we have determined the amount we are going to have, someone should be able to use some discretion as to whether you are going to buy diamonds or whether bread and butter.

Apportioning a Budget Between Departments

We finally adopted the scheme of apportioning a budget. We divide that up as between the different departments as to the money and that we will receive requisitions for during the month of June. On the C. M. & St. P. we have already prescribed the amount of money that storekeepers can send in for requisitions during the month of June. A district storekeeper told me the other day that his allotment was so small that he had to scratch, and so he went to each car foreman and told him, "You will have to see that you rebore your brasses for your system cars and save your new brasses for the foreign cars, because I can assure you I haven't money enough to buy you new brasses for all of these cars." The result is that we have reached the car foremen with a question of dollars and cents value of his material.

Economy in Repairs

We have gone to the different shop foreman at a big storehouse on our line. They had only a limited amount of money for their mechanical department, and a big center casting for one of the big electric locomotives was dragged into the shop, and the price on it was $675. After discussion they decided that they could repair the old one for $40 and save that money to buy the other materials that they needed and get money repaid by repairing the old item.

Advisability of Budget Questioned

Mr. Ditto: I don't question the wisdom of budgets. I simply took exception to paragraph 4 because it intimates that the expenditures are controlled by the purchasing and stores department. Take that machine that was to be repaired—the superintendent of motive power or the master mechanic, should not have recommended buying a new machine if the old one could be repaired.

Mr. Hall: The idea is that in applying this ratio, where a certain amount of money has been allotted for payroll expenditures, it will permit of so much to be spent for materials and supplies. Taking the total of this material and supplies allotment which will follow this ratio, it will then be broken down into classes as to how much should be spent for each class.

Operating Budget

The first principle is the thorough establishment of the operating budget. The second determining feature is the ratio between payroll expenditures and material expenditures.

H. C. Stevens (Wabash): If all of our operating performances were 100 per cent perfect, we wouldn't need any budget. We know they aren't. We know that everything that is possible is going to have to be done within the next few years to make a better showing, even though the past one may have been reasonably satisfactory.

Practically all physical operations are now on the budget or allotment basis. If you know three or four months ahead what each department is going to be permitted to spend both for labor and material, you can come pretty close to figuring what proportion of that will be in material and reasonably what you ought to provide to protect it. I think this move is one of the biggest factors for progress.

Budget Based on Previous Performance

H. H. Laughton (Sou.): I am from one of the roads that has a budget. We can come within five per cent of what our total operating income is going to be for the year on December 31, 1926. That is based on previous performances. The allotment is made for the payroll and material for 30 days. The operating expenses are based on the anticipated gross revenue and it is set up by months. As the payroll is granted to the stores department and to ment, so is a relative ratio of material. That doesn't the maintenance department or to the mechanical departmean that we are going to spend the same amount of money in June that we will in July or that we will in August that we did in July. If the stores department issues more than is allotted to the mechanical department, it is up to them to get some scrap and reduce that charge-out to expenses. If the mechanical man has a tool that has to be repaired and he hasn't anticipated it, he has to shave down on something else to get that fixed. Everybody ought to try and put it in on their own railroad.

W. Davidson (I. C.): All departments on the Illinois Central have the allotment system. We come as close as Mr. Laughton does. Recently we have adopted this in the purchases and stores department, and we have obtained some wonderful results. We are getting into the classes by allotment. A set of requisitions of one class passes through all departments, then passes to the general storekeeper—they are all laid on his desk at one time, they are priced, and a little ticket is put on this particular class of how much the day's supply is in this particular class, the amount of money used or disbursed the previous period, and the amount of the requisition. We can immediately see in that class where we wish to purchase $37,000 and the month previous we only used $24,000.

The allotment is made by the purchasing agent and myself each month. I could tell you at ten o'clock this morning if I were in my office how much I have forwarded to the purchasing agent up to that hour today, and how much my allotment was. We are getting some wonderful results, and it is only a matter of time until we have got to get into it.

Mr. Ditto: Your road is run entirely different from the Nickle Plate. On that road when a purchasing agent gets a requisition, it has been thoroughly gone over by the heads of the different departments, and his job is to buy the material. That is why I say the purchasing agent can not help in maintaining the budget or reducing expenditures.

Mr. Davidson: He can help it. Along toward the twenty-sixth or twenty-eighth of the month, if our allotment has been exceeded, the purchasing agent calls me up and says, "We have a lot of requisitions here, and we are up to our allotment. What can we do about it?" I sort them out like in a game of solitaire. I say, "Buy these next month, buy these now," and so we work together and get the results.

Mr. Thomson: From what Mr. Curtis says, I take it that on the C. M. & St. P. they budget the departments as well as the purchasing department.

Chairman Young: Mr. Ditto's question is a very practical one, and we have had a splendid discussion. Paragraph 4 says that, having determined with the operating people how much money they want to spent and having determined how much they expect to pay out in payroll, you can then determine how much they can spend in material. If you are going to spend $100, and $50 of it is pay-roll, the other $50 is going to be material. Therefore if you buy and if you supply to that particular man more than $50 worth of material, you are laying up an addition at that particular place in your inventory.

In giving the man the $50 worth of material, we don't say that you can't have what you want. You can have anything you want so long as you don't spend more than $50. The store-keeper and general store-keeper would have to control the situation for the purchasing agent and not make the requisition for things he couldn't spend.

Mr. Ditto: The requisitions are cut sometimes in the mechanical department, but when the requisition is signed by the general manager and it is presented to the purchasing agent, on our road his job is to buy the material.

Chairman Young: That gives another aspect to the budget question, which indicates the proper attitude of mind of our committee on this subject. There are different practices on different railroads. On the railroad with which I am connected, the operating people have nothing to do with the requisitions. We make all the requisitions. We do all the cutting. We supply what they need when they need it and not what they think they need.

Mr. Ditto: After requisitions for material are made, is it the purchasing agent's job to check it?

Chairman Young: There is nothing for him to do but to buy it. He can help very much by telling the general storekeeper how much he has already requisitioned against an anticipated expenditure.

The motion to adopt the report was put to a vote and carried.

Professor W. J. Cunningham: One of the outstanding developments in the science of administration that has come about since the period of the world war has been this principle of budgeting. The large industrial concerns are, I think, one or two steps ahead of us. A few of the roads are following on practically the same basis. The rest of us are marking time. The committee's report is an admirable one so far as it goes. Personally, I wish they had gone a few steps further. I should have liked to have seen that report based more along the lines of Mr. Curtis' remarks. They coincide with my thought of scientific budgeting.

We can do something by working on the basis of the past. We can do more by forecasting for the future, not so much on the basis of what is past, but on the basis of what is needed. As Mr. Laughton has stated, the budget begins with an estimate of gross revenue. It ends with what is to be left for the payment of charges and dividends, and in between the two, we have to move around, adjust, estimate, determine and alot. But if the allotment is to be based on a ratio, then we can't meet entirely one of the fundamental purposes of budgeting. The main purpose of budgeting is to conserve net income. A secondary, and an important purpose of the budget is to prevent the accumulation of excess material which will become obsolete.

If we depend entirely upon a ration of what our past performances has indicated, with possibly an excess or an absolescence percentage of, say, 10 per cent., then our ratio of the future, based upon the past, will contain the same relative amount of excess or obsolete material. It is when we look forward, that we can meet both purposes. It would like to see the viewpoint of the committee's report, looking forward instead of backward. So if the committee is to be continued, I wish more strength to their arm and less caution next year.

Report on Forest Products

H. R. Condon
Chairman

Class I roads of the United States spend in the neighborhood of $200,000,000 annually for forest products and thus constitute the market for about 20 per cent of the country's total lumber production; hence the justification of committee work on this subject. The committee this year is conspicuous for the predominance of members exclusively engaged in inspection service representing a point of view which is reflected in its report, where attention is again called to slack enforcement of specifications governing the purchase of ties and lumber. In this report also, stress has been laid upon the evils of unsteady inspection service and practical suggestions have been given on the methods of getting better results. A method of scheduling timber shipments is also developed and the economies resulting from the better care of lumber stock is reiterated and supplemented by recommendations for stores officers to follow in handling this commodity. The present status of lumber standardization has also been reported upon by the committee.

The extent to which emergency purchases continue to be made causes the committee to again stress the fact that forest products can be purchased economically only when demands are made known sufficiently in advance of needs to permit of orderly procurement and distribution. Purchasing and stores officers are urged to use all means possible to stimulate timely requisitions. It is believed that appropriate action would be obtained more readily if it were generally appreciated that when mill purchases are not possible, because of delivery requirements, a substantial premium is paid for quick delivery of many items from yard stocks.

The extensive use of treated maintenance-of-way forest products makes it essential to have needs for that class of material made known in time to permit of procurement and delivery for seasoning preliminary to treatment. While some kinds of wood may be artificially seasoned in a short time the cost of such drying is excessive. From 6 to 15 months generally are required for economical seasoning.

In order that stock accounts always may be held to the lowest figure consistent with safety, schedules of procurement and distribution should be formulated whenever practicable, particularly for maintenance-of-way materials. A plan now in effect, and one which the committee believes should be extended in practice, is that of planning at least 12 months in advance of use for the monthly procurement and distribution of cross, switch and bridge ties, bridge timbers, piles, etc. In that manner commitments, quantities distributed on line and stored in seasoning yards are minimized and adequate. Table 1 represents such a schedule for use in the control of cross-ties on a road using both treated and untreated woods, where an average of 12 months is required to season ties before treatment and a distributed stock at all times at least equal to the consumption scheduled during the two succeeding months is believed to be the lowest line stock compatible with safety. With modifications the form is applicable to other forest products, and the use of such a control chart is recommended.

How One Road Schedules Its Cross Tie Requirements

Month	Consumption Classes U and Tr. T.	Distributed Stock (Available for Use)			Stock at Treating Plants Class T	Total Stock on System Classes U & T	Receipts on R/W		Receipts At Tr. Plts. for Stock Class T
		Class U	Treated Class T	Total Classes U & T			Foreign and R/W Class U	From Treating Plants Class T-Tr.	
January	27,000	9,000	286,000	295,000	900,000	1,195,000	7,000	18,000	18,000
February	39,000	12,000	280,000	292,000	900,000	1,192,000	9,000	27,000	27,000
March	78,000	15,000	273,000	288,000	900,000	1,188,000	11,000	63,000	63,000
April	121,000	13,000	272,000	285,000	900,000	1,185,000	10,000	108,000	108,000
May	145,000	10,000	274,000	284,000	900,000	1,184,000	9,000	135,000	135,000
June	140,000	8,000	282,000	290,000	900,000	1,190,000	11,000	135,000	135,000
July	142,000	7,000	289,000	296,000	900,000	1,196,000	13,000	135,000	135,000
August	96,000	6,000	292,000	298,000	900,000	1,198,000	8,000	90,000	90,000
September	95,000	5,000	293,000	298,000	900,000	1,198,000	5,000	90,000	90,000
October	66,000	3,000	296,000	299,000	900,000	1,199,000	4,000	63,000	63,000
November	36,000	5,000	291,000	296,000	900,000	1,196,000	5,000	18,000	18,000
December	23,000	7,000	290,000	297,000	900,000	1,197,000	9,000	18,000	18,000
Totals	1,000,000						100,000	900,000	900,000

Purchasing

The practice of submitting inquiries for forest products to manufacturers and wholesalers with requests for terms and the placing of business with the lowest responsible bidder is practicable and desirable. The receipt of material for destination inspection which fails to meet the specifications under which it was purchased is more demoralizing to shop and maintenance-of-way programs than failure to ship.

J. H. Waterman and His Friends Inspecting Forest Products

Shippers should be informed that lumber rejected at destination cannot be stored by the purchaser for longer than 30 days. Formal notification to that effect may be given in specifications or order forms.

The committee believes that the weights of lumber published by the several lumber associations and used generally by sellers to determine the amount of freight to add to mill costs, for the purpose of quoting delivered prices, are higher than the actual weights of average consignments, and that the buyer who habitually purchases on a delivered basis without investigating this feature is likely to pay a premium over the buyer who purchases on an f. o. b. mill basis.

The usual terms of payment under which lumber is quoted are 60 days net or 2 per cent cash within 15 days from date of invoice. Taking advantage of this cash discount whenever practicable will show a substantial saving in the cost of lumber. Only invoices from sellers whose reliability is unquestioned should be discounted.

It is too seldom appreciated that the segregation at destination of mixed sizes and kinds of cross, switch and bridge ties and other forest products results in considerable expense. Inspectors should be informed of unloading problems and ex-

pense, and should cooperate with shippers in obtaining the required separations. The results of such effort on the part of each Inspector should be checked at material destinations.

Distribution

Requisitions for Classes 4, 5 and 30 material should reach the purchasing agent as nearly as possible on the same day of each month, in order to simplify procurement and distribution.

Whenever practicable forest products should be shipped direct from place of production to that of use, the storekeeper being held responsible for disposition, and required to report unapplied material. Line stock should be minimized, holding only the quantities actually needed. Care must be exercised in effecting delivery of items as needed in order to avoid needless handling charges, as well as delay to operations.

When deliveries are made from treating points or other storage plants it is practicable to control definite schedules of deliveries.

Organization

A well-trained, adequately supervised and mobile force of inspectors sufficient in numbers to do the work required is essential for economical inspection. The measure of efficiency of such a force is the character of the material accepted and not merely the cost of inspection. The cost of inspection per unit purchased is useful for comparisons but should not be construed as an universal index of efficiency. A very low unit cost may represent a loss to the consumer of forest products in inverse ratio to the inspection cost, due to the acceptance and payment for non-standard material.

Undermanned inspection forces necessitating the frequent use of "emergency" or "part time" inspectors are difficult to administer and apt to be very costly in the results obtained. It is the conviction of your committee that capable inspectors generally should be employed continuously in order to have them available when needed.

During periods of lessened demand for inspection service efforts should be made to divert excess inspectors to other profitable employment, in order that their services may be had when required. The training of new inspectors is no less costly than education in other branches of service where knowledge and experience can be gained only by experience under adequate supervision.

It has been found desirable to hold periodical group meetings of inspectors for the pupose of discussing inspection problems and the giving of instruction. When places of concentration of forest products, such as wood-preserving plant storage yards are accessible and time permits, a physical review of work done by inspectors is profitable. Meetings at such places can be arranged during periods of lessened activity, and afford an excellent opportunity for correcting faulty inspection practice. It is there that inspectors can best be acquainted with yard problems of unloading and sorting forest products improperly sorted or not sorted when loaded. Knowledge thus gained, and applied by inspectors when loading cars, will pay many times over the cost of instruction and time lost from actual inspection work.

Enforcement of Specifications

Your committee supplements previous reports and recommendations that all forest products be purchased under definite specifications, the terms of which are thoroughly understood and impartially applied by inspectors of forest products, by urging that supervisory officers insist that terms of purchase actually be enforced. It is believed that purchase and inspection of cross-ties permits of more justifiable criticism of failure to insist on contract terms being met than in the procurement of other forests products. The conditions reported by this Committee in 1924 under "Inspection" still obtain to a considerable extent.

Each cross-tie should be plainly and permanently marked with the grade at which it was accepted. Otherwise the accounting and checking of the ability and trustworthiness of inspectors is made difficult if not impossible.

Care of Lumber

While some progress has been made in providing sheds for the storage and protection of kiln dried lumber such as siding, lining, roofing, ceiling and flooring, and of such costly woods as dried poplar, ash, mahogany and quartered oak, considerable remains to be done to prevent the substantial losses still incurred on many roads through failure to properly store such materials. Adequate sheds are inexpensive, and failure to provide them where needed is costly. It is estimated that a loss of 25 per cent may result from depreciation and difficulty in applying open-piled dressed and matched lumber.

Cross, switch and bridge ties of kinds of wood which tend to check or split excessively during seasoning should be protected against such injury by having S-irons or other anti-splitting devices inserted in their ends as soon as practicable after manufacture.

Standard methods of stacking ties should be devised to meet the requirements of each road and should be adhered to. General stipulations for forest products storage were adopted in 1919, but the indifferent application of recognized principles on some roads indicates a need of corrective action.

Figures I and 11 illustrate cross-tie stacking methods which have been found best adapted to conditions on many roads. It is essential that bearing surfaces be minimized and kept as near the ends of ties as possible. The stacking illustrated in Figure I is recommended because it minimizes the chance of "stack burning," as 50 per cent of the tie contacts are very slight in extent.

Bridge-ties may be stacked in the same manner as cross-ties.

Switch-ties 12 feet or shorter in length also may be stacked as are cross-ties, but longer lengths should have intermediate bearings to prevent sag and distortion when stored for long periods, as when being seasoned.

Substantial bearing must be provided under and in high

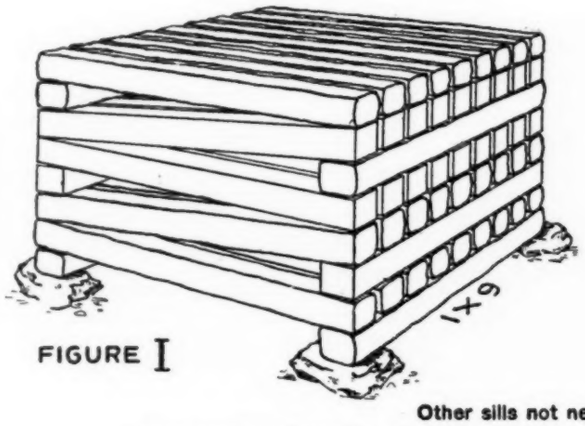


FIGURE I

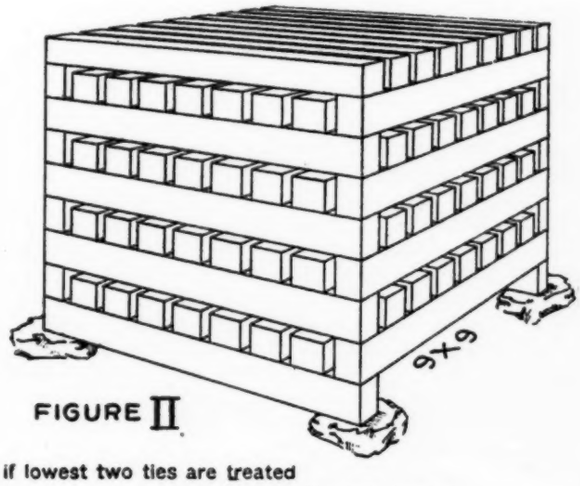


FIGURE II

Other sills not necessary if lowest two ties are treated

ROUND AND RECTANGULAR TIES — RECTANGULAR TIES ONLY

Methods of Stacking Untreated or Salt-Treated Ties

stacks of ties because of the weight which must be carried, otherwise ties will be damaged by crushing at contact points. Comparatively small "stickers" for separation of layers are not generally satisfactory because of their effect in retarding seasoning, due to reduction in size of air passages. The retardation of air circulation usually results in slower seasoning and the holding of ties for a longer time before they become dry enough for proper preservation. Stickers also have been found undesirable in some seasoning yards because of the expense of supplying and handling them, and the loss due to breakage in use.

In order to prevent stack burning of the necessarily extensive contact areas in stacks of the longer lengths of switchties it has been found economical to coat the upper and lower surfaces of cross pieces or bearings with creosote. Such protection may be given at slight cost by applying creosote with a swab or heavy brush as the ties are stacked.

Committee: H. Condon, assistant forester (Penn.), (chairman); A. T. Babcock, tie and timber agent (W. M.); M. E. Bolinger, lumber agent (N. & W.); R. A. Bury, general tie agent (N. Y. C. L.); H. O. Bush, general lumber and tie inspector (Erie); T. H. Clarke, tie and timber agent (Sou.); S. M. Elder, lumber agent (B. & O.); D. R. Elmore, assistant to general manager (Fruit Growers Express); W. A. Knight, assistant lumber and tie agent (I. C.); G. H. Robinson, purchasing agent (O.-W. R. & N.); O. A. Schultz, chief lumber inspector (C., B. & Q.); F. V. Weisenburger, timber agent (N. P.), and L. Lavoie, general purchasing agent (C. N.), (chairman ex-officio).

Discussion

F. McGrath (B. M.): With reference to the statement that "Each cross-tie should be plainly and permanently marked with the grade at which it was accepted." I would like to see that read, "Each cross-tie should be plainly and permanently marked with the grade and show inspectors mark and number and by whom it was accepted." If the mark and inspectors number is not shown, you would not know who accepted the tie.

Mr. Condon: We accept that suggestion.

Chairman Young. The Committee agrees.

Mr. McGrath: I would like to ask Mr. Condon if he has any data available regarding how many railroads inspect their lumber at the mills, and how many inspect at destination?

Mr. Condon: The commitee has no definite information of the relative statistics. The question was discussed in committee meetings, but no effort was made to determine what percentage of the total take up of forest products was inspected at the mill and what was inspected at destination.

Mr. Munster: There has been much published this year on the inspection of cross-ties, of keeping up the quality, and, if I remember correctly, either two or three years ago, the forest products committee at that time agitated the matter. Was the question brought up to the committee this year as to what could be done to keep in front of the attention of the railroads, and the necessity for living up to grade?

Mr. Condon: Inasmuch as machinery was provided in 1923 to take care of that situation, this committee did not consider it necessary or advisable to take any further action.

W. F. Jones (N. Y. C.): The committee has mentioned the ways for the inspector who is more familiar with the loading than the unloading to cooperate with the shipper. We have been cooperating for sometime. What we want now is some recommendation as to how we can control it, so that we do not have the expense of unloading greater than it should be.

Mr. Condon: The question of how to achieve that desired result is rather a difficult one for a universal prescription. The eastern roads have one problem, the western roads have another. The committee did not deem it desirable to attempt to stipulate in detail just what should be done in getting that desired result. The committee does believe, however, that much can be done by instructions to inspectors that are more detailed than those usually given them, and that furthermore results can be obtained if the functioning of the inspectors is checked at material destinations. We believe that it is practically useless to give instructions to inspectors who are, as the committee reports, very familiar with loading problems, and many of them are quite unfamiliar with unloading problems, to get the results that are wanted, unless some effort is made to check their results at material destinations and giving credit where the inspectors are really functioning and getting after those who are not functioning.

H. C. Stevens (Wabash): We have had that problem come up several times and it seems to resolve itself around what you can get the shipper to do and whether or not you are willing to pay him to do it.

A. S. McKelligon (S. P.): In your research on this subject, how many purchasing agents did you find making that request on their orders to to the seller? Did you find they were doing that?

Mr. Condon: There were a great many of the purchasing agents who were putting that on their orders. Just what percentage of the total number, I do not believe any one on the committee knows. It is believed that in many cases the payment of an additional premium would be profitable in order to obtain the proper loading of forest products. Just what that premium ought to be, if any, would have to be developed for each individual road based on their cost of sorting improperly loaded material, and on the demands of the shipper.

Mr. McKelligon: If that is on the order and the seller accepted it, would it not be part of the contract.

Mr. Condon: It is part of the contract and unquestionably ought to be enforced but the fact of the matter is that on comparatively few roads is there a real check to see that it is enforced.

There being no further discussion the report was adopted as read.

Department Meetings

By C. H. Kelly

District Storekeeper, Lehigh Valley

In the stores department of the Lehigh Valley the general storekeeper arranges periodical meetings of his district and division storekeepers. These meetings are held at various stores each month so as to give each storekeeper an opportunity to acquaint himself with various officials and conditions on the different divisions.

At these particular meetings, naturally, most of the time is devoted to the discussion of stores operations and methods. No departmental lines are drawn, however, and we endeavor to have the shop superintendents, master mechanics, or heads of other departments, sit in and express their thoughts as to the betterment of the service.

Carefully selected subjects are listed for discussion such as: material balances, costs, overtime payments, labor turnover, fire prevention, reclamation, etc. Besides these, the general storekeeper has one of his staff prepare a paper on some special subject to be read and discussed at the next meeting. The subjects assigned vary, such as, accident prevention, human relationships, obsolescence of material and usage of various materials.

These meetings have instilled self-confidence in our boys. In-

stead of being content with merely sitting in and listening and being afraid of putting their thoughts into words, the stage fright, as it were, has left them and they now have the courage to forcibly put forth their expressions of opinion.

We continually stress the importance of pursuing studies along all lines of our work and keeping abreast of the times by reading all the good current railroad literature which will give us that preparedness necessary for any emergencies which may arise.

It is impossible to have all supervisory units attend these meetings, but the district or division storekeeper, upon return to his home station, calls a meeting of his immediate supervisory units and discusses with them the subjects brought up at the general meeting.

On all operating divisions, the superintendent has monthly Staff meetings; also safety and fire prevention meetings, at which the heads of all departments on the particular division are represented. There are also meetings of the agents of the various divisions where representatives of the transportation, traffic, freight claim and other departments are present. In these meetings all matters pretaining to divisional operation are discussed and all present are made to feel that the discussions are to be free expressions of opinion. In this manner many important ideas are developed. The storekeeper attends these meetings and consequently is brought into personal contact with all officials.

In addition the storekeeper also attends the shop foremen's meetings and gets first hand information of activities that are under consideration and is therefore well equipped with sufficient data to enable him to provide material in time for any special job in view.

We also have an annual business meeting of all supervisory units. At this meeting the entire day is given over to discussion of operations affecting the stores department, and in addition we endeavor to have the heads of the other departments closely connected with us; such as the purchasing agent, comptroller, superintendent of transportation, superintendent of motive power, etc., outline the operations of their departments insofar as the stores department is affected.

As a result of these meetings departmental lines are faint and in fact are not recognized in the general welfare and interest of the company as a whole. The classification of our employes is not confined to individuals but considered as one family group, thereby creating better cooperation and closer team work.

Departmental meetings bring out not only one's own experience but also the other fellows and, as has been said, "Well directed thought is like the arrow which goes straight to the mark." Every one of us needs encouragement and when sympathy and suggestion come from others it lightens the burden and we come away from these meetings refreshed and better equipped to carry on.

To be a successful stores man, one must grasp and understand railroad problems in all their ramifications and inter-relations and much of this knowledge is gained in departmental meetings.

Departmental meetings, we feel, are the most fruitful way of reviewing the program to be worked out and policies to be followed and with the combination of thought available we naturally are enabled to check up on any weak spots thereby strengthening our organization and clarifying any possible doubt as to standard practices. They act as an incentive to bring about better results and set up a standard for the qualifications we insist our men must possess. These are loyalty, honesty and integrity, which are the greatest factors in the measurement of efficiency.

Departmental meetings stimulate the interest of the storekeepers and their supervisory forces, awaken keener interest in our work and afford us more extended acquaintanceships, better understanding and closer cooperation between our men and the men in other departments and effectively protect our own interest by seeking to protect the management.

The departmental meetings are full of interest not only to the particular individual but to the railroad company as a whole, due to the fact that the storekeeper is brought into personal contact with practically every department of the system, thereby enabling him to appreciate that there is someone outside of his own department to be considered if a successful and economical operation is to be maintained by the railroad company.

Discussion

C. C. Kyle (N. P.): The practice on the Lehigh Valley is similar to the standard practice on the Northern Pacific. Two years ago we inaugurated a monthly store staff meeting. These meetings are held at each station and district store. The chairman of the meeting is the ranking officer there. The time of a meeting is probably two hours and those in attendance are the supervising officers and as far down the line as the section stockman. We invite the supervising officers of the using departments, and at these meetings we have papers read by the various employees who attend these meetings. We mimeograph the papers which are exchanged with every other store on the railroad. We sift out the better suggestions and encourage the men by the adoption of some of them.

W. S. Morehead (J. C.): We make minutes of the meetings which are circulated to those interested. Also, we particularly encourage the division officers to have our storekeepers represented at all safety meetings. In some cases storekeepers are appointed chairmen of these meetings, and we get a great deal of good out of it. In holding our own meetings, we usually prepare a list of subjects.

A. W. Munster (B. & M.): About two years ago, I visited the Lehigh Valley storehouse. As a direct result of that visit we formed what is known as the Booster's Club at our main storehouse at Billerica, Mass. This club holds meetings once a month, and the attendance runs from 75 to 125. While there has been more of a social angle to it, perhaps, than business, papers are prepared by the store men and they invite the heads of other departments, the operating and the mechanical, to give talks.

C. J. Mackie (C. B. & Q.): We have a club in which we planned to take in the supervisors at our Aurora, Ill., and Eola plants. We operate a scrap plant at Eola, and a general store at Aurora. We found that the interest became so great that we began to amend our original plan and let men in who were doing special work. We even went so far as to charge a slight initiation fee. We hold monthly meetings and have papers prepared in advance. We accumulate instructions received during the month and go over those at the meetings. After these meetings had been going on for some time, many of our stockmen, machine operators, and gang foremen began to say how thankful they were that they had had an opportunity to attend those meetings.

We do not make these meetings purely business although we have the business side. The presiding officer is one of the supervisory officers of the plant. We try to have the chairman of the meeting elected by those who are members to serve three months. Of course we confer with that man ahead of the meeting and give him any suggestions or ideas that he may want to have carried out. After the business meeting, we have a social hour. Sometimes we bring in outside entertainers. Sometimes we provide our own, and almost always we have something to eat before we go home.

A few months ago, we decided to hold an open house to which we invited all of our families. We asked that each family invite the next-door neighbor and his family, so that we made it a get-together meeting for the employees of the department and also for the friends and neighbors. We got out something like seven or eight hundred people that night.

J. T. Kelly (C. M. & St. P.): We have been holding meetings of this nature for the past five or six years. Once a year we have a meeting that is attended by approximately 90 to 110 store-keepers, section stockmen and supervisors. This meeting usually lasts three days. We hold it in the fall of the year. We have our business session during the workings hours, and in the evening we have an entertainment.

E. H. Polk (S. P.): I believe that these meetings are the most valuable means that we have of educating the younger men in the stores department. Our general storekeeper calls a meeting at least twice every year which is attended by all of our division and district storekeepers. At the main district stores, we have our meetings at least every two weeks. We try to promote the education of the younger man.

New Devices

White Exhibits Two-and-One-Half-Ton Truck Chassis

THE 2½-ton truck chassis exhibited by the White Company, Cleveland, Ohio, is equipped with the same type of engine used in the 5-ton heavy duty White trucks. It is designed for the handling of l. c. l. freight in line or terminal service or for use in shops or storehouses. The extra large size of the engine gives an ample reserve of power for hill climbing or truck trailer operation. This model truck can be supplied with

White Truck Used by Pennsylvania Under Contract

wheel bases of 170 or 190 inches and with a winch and power take-off equipment.

Trucks of this model form part of the fleet of 23 White trucks in the service of the Beaver Valley Service Company, Pittsburgh, Pa., one of the freight hauling contractors for the Pennsylvania. Daily pick-up and delivery of l. c. l. freight is carried on by this company on highways paralleling the railway lines for a distance of 225 miles.

Six-Wheel Company Shows New Truck Chassis

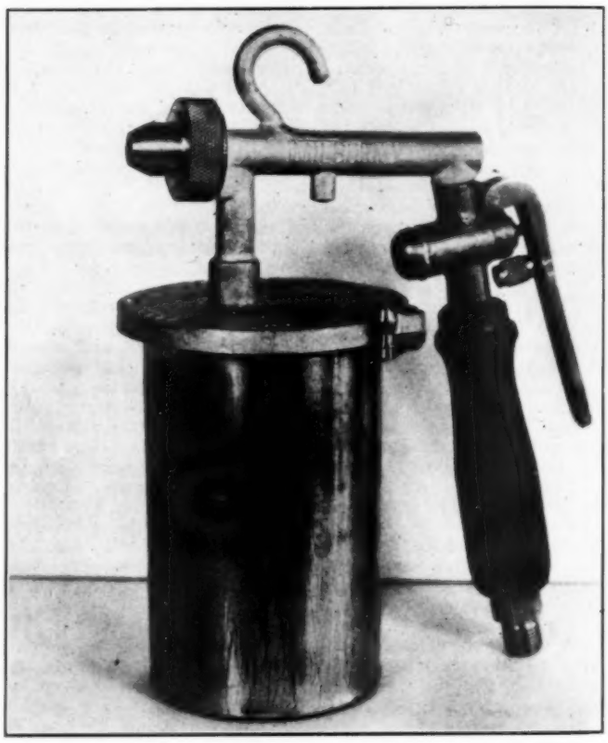
THE Six-Wheel Company, Philadelphia, Pa., has recently developed a new model three to five-ton truck chassis especially designed for the transportation of freight on fast schedules. The truck is equipped with a six-cylinder Waukesha motor. The chassis includes a battery type ignition system, a carburetor providing for the heating of the gasoline mixture, a two-unit generator and starting motor, a compound transmission with a ratio of 60 to 1 in low gear, a multiple disc clutch and Timken axles of the full floating type driving on all four rear wheels. Westinghouse brakes operate on all four rear wheels. The disc wheels are equipped with heavy duty truck type tires.

The chassis weight is 9,000 lb., with a capacity of 3½ tons normal and 5 tons maximum. The speeds are 38½ miles an hour maximum and 27½ miles an hour minimum in direct drive, 49½ miles an hour maximum and 35½ miles an hour minimum in overgear.

In a transcontinental test run, this truck carried a five-ton load from New York to Los Angeles in 6½ days actual running time. The previous record was 13½ days.

Milburn Mechanical Painting Device

A DEVICE for mechanical painting is included in the exhibit of the Alexander Milburn Company, 1416-1428 W. Baltimore street, Baltimore, Md. This device is recommended for a wide variety of uses such as painting the interior and exterior surfaces of walls; painting and varnishing woodwork; painting tanks; coating cement floors and walls to prevent cracking, dampness, etc.; whitewashing; oiling and parafining motors and machinery parts, and other jobs of similar nature.



A Mechanical Painting Device Designed for Handling any Kind of Paint as Well as other Kinds of Coatings, such as Oil, Parafine, Etc.

Referring to the illustration, the paint enters a large annular chamber surrounding the air nozzle, from which it is atomized and expanded in a venturi-shape. The atomization is regulated by turning the nozzle from a small to a large spray, or the flow of paint can be shut off, allowing a stream of air to flow through the nozzle which can be used for dusting off surfaces. A pressure of 40 lb. is best adapted to the operation of this device, which can also be used with carbonic tanks.

The Milburn mechanical painting device is light in

weight consisting essentially of a cover, body, atomizer and handle. There are no small parts to get out of order or to require adjustment. The design provides for simplicity in construction and absence of moving parts and passages likely to clog. The principle of atomization used in the Milburn mechanical painting device is such that one coat is sufficient on jobs where two coats are usually required when applied by brushing.

"L. C. L. Haulers" Exhibited

A FOUR-TON truck similar to those now in service on the Pennsylvania, through Scott Brothers, with whom the railway contracts for the handling of l. c. l. freight, is a feature of the exhibit of the Garford Motor Truck Company. The parts of the chassis which contribute to reliability and operating economy are the four-cylinder engine with removable cylinder head, the strongly braced semi-flexible frame, the high and low range transmission with seven speeds forward and two reverse, the worm drive rear axle, the multiple dry disc clutch and the three-point spring shackle which protects the rear axle and entire truck mechanism from driving shocks and preserves the full flexibility of the spring. The driver's compartment is fitted with seat cushions set at an angle to increase the comfort of the operator. The front tires are solid with a five-inch tread and the rear tires solid with 12-inch tread.

The pay load capacity of the truck exhibited is 8,000 lb., the over-all length being 251 in. The chassis weight is 8,700 lb.

Garford Trucks Used by Pennsylvania Freight Haul Contractors

Drawn Steel Generator Frames

THE automobile industry has developed the drawn steel industry to a high degree of perfection and the results are today evidenced in many other industries where drawn steel is displacing cast steel. The Safety Car Heating & Lighting Company is exhibiting its new line of car lighting generators having drawn steel magnet frames. The advantages are uniformity of electrical characteristics and reduced weight.

Motor Truck Adapted to Railway Service

A THREE-TON motor truck particularly adapted to the requirements of railways using trucks in terminal and other freight service and in shops and storehouses is being exhibited by the International Harvester Company, Chicago. The engine is of the four-cylinder type, the cylinders being removable. All working parts are entirely enclosed and protected from dust and dirt but made easy of access by hand-holes and removable plates.

The steering gear of this heavy duty motor truck is designed to make its operation as easy and as little tiring as possible for the driver. The steering wheel post is set at an angle, as in passenger automobiles, and with a vertical connecting shaft gives the maximum of foot clearance.

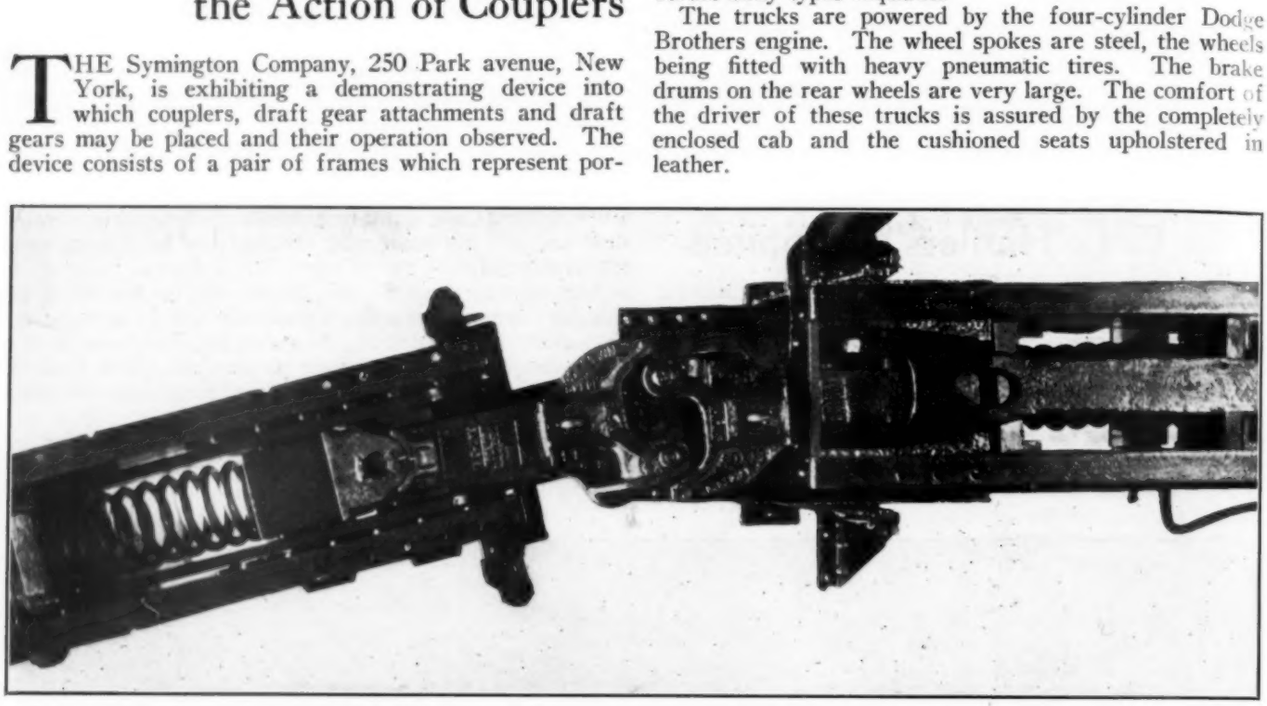
The proper cushioning of all loads is provided for in the quarter-ellipitic auxiliary rear springs, with which all International Harvester motor trucks are regularly equipped. These auxiliary springs come into action when the load is so great that the main spring, which affords adequate cushioning for ordinary loads, are insufficient.

International Harvester Model 63 Motor Truck

Through the use of these auxiliary springs it has been possible to make the main springs flexible enough to protect the lighter loads.

Machine for Showing the Action of Couplers

THE Symington Company, 250 Park avenue, New York, is exhibiting a demonstrating device into which couplers, draft gear attachments and draft gears may be placed and their operation observed. The device consists of a pair of frames which represent portions of the underframes of coupled cars. These are hinged together in a manner whereby they may be swung to produce the effect of track curvature. Air cylinders are provided for operating the entire draft mechanisms, so that the action of all parts, either in pull or in buff, on straight or curved track, may be demonstrated. The apparatus discloses some peculiarities of draft gear action that are interesting to observe. The action can be slowed down to a degree whereby the effect of slow motion pictures is obtained.

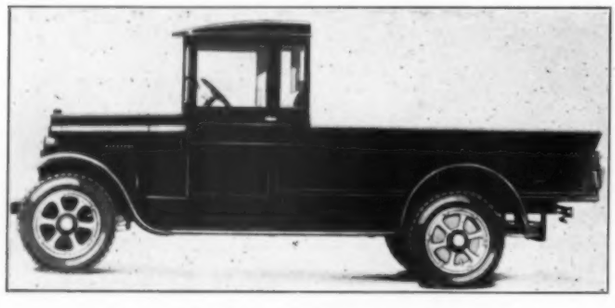


Device into which Couplers, Draft Gear Attachments and Draft Gears may be Placed and Their Operation Observed

Graham Brothers' Trucks Have Interchangeable Bodies

GRAHAM BROTHERS, Detroit, Mich., are exhibiting a "G-Boy" canopy truck of one-ton capacity and a one-and-one-half-ton capacity stake body truck. These trucks are featured by interchangeable body units which make possible the conversion of the express body to the canopy or panel type, or vice versa. Varying conidtions may thus be met readily with the different body types required.

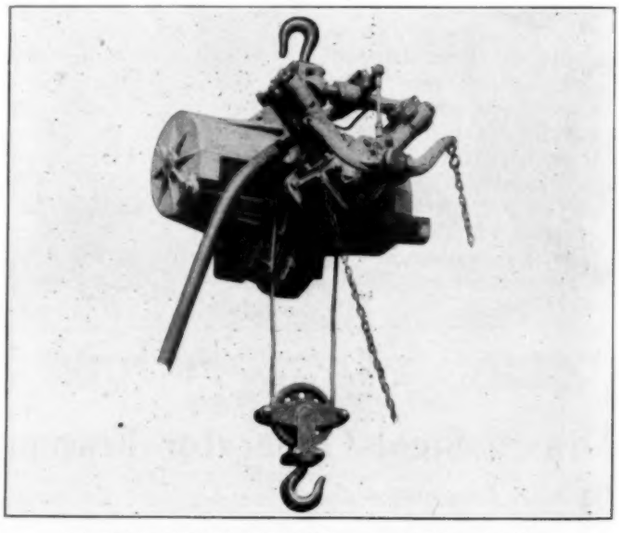
The trucks are powered by the four-cylinder Dodge Brothers engine. The wheel spokes are steel, the wheels being fitted with heavy pneumatic tires. The brake drums on the rear wheels are very large. The comfort of the driver of these trucks is assured by the completely enclosed cab and the cushioned seats upholstered in leather.



Graham Brothers G-Boy One-Ton Truck

Additional Sizes of Thor Air Hoists

TWO sizes of Thor pneumatic motor hoists have been added to the line manufactured by the Independent Pneumatic Tool Company, Chicago. They are the size No. 500, of ¼-ton capacity, 20-ft. lift, 220 ft. per min. no load speed, and 80 ft. per min. full load speed. The size No. 1,000 has a capacity of ½ ton with 20-ft. lift, a no load speed of 75 ft. per min., and a full load speed of 40 ft. per min. Each of these hoists weighs practically 200 lb. and has a minimum distance between



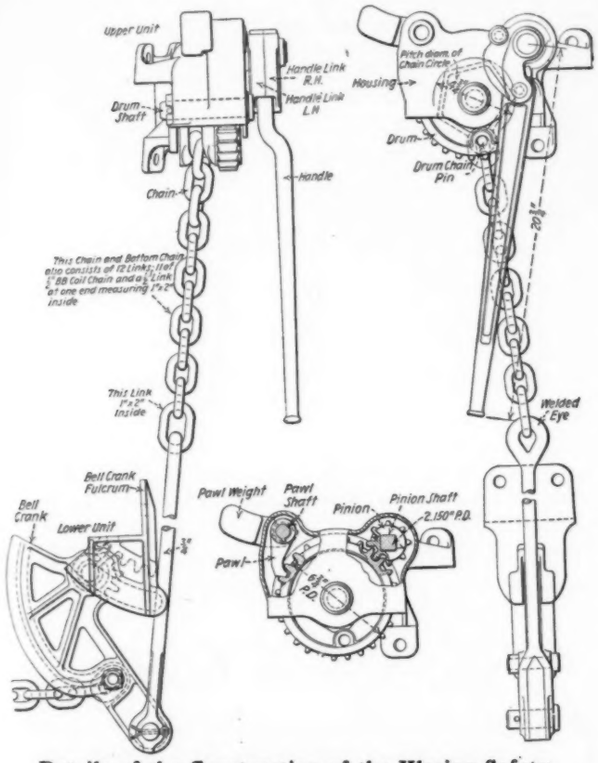
The One-Half-Ton Thor Pneumatic Motor Hoist

hooks of 26½ in. Ten feet additional lift can be provided if needed.

The new Thor hoists are designed for relatively light, high speed service and therefore lend themselves readily to use in railroad locomotive and car shops where parts too heavy for convenient movement by hand but weighing less than ¼ ton or ½ ton can be quickly lifted, turned and adjusted by means of these hoists. These hoists are identical in general type of construction with the older and heavier Thor pneumatic hoists and are designed to include the same features of safe, rapid and economical operation. They are equipped with an automatic stop, swivel suspension hooks, and a drum cover with permanent eyelet for the temporary cable used in placing the hoist in position.

A Hand Brake of Rugged Construction

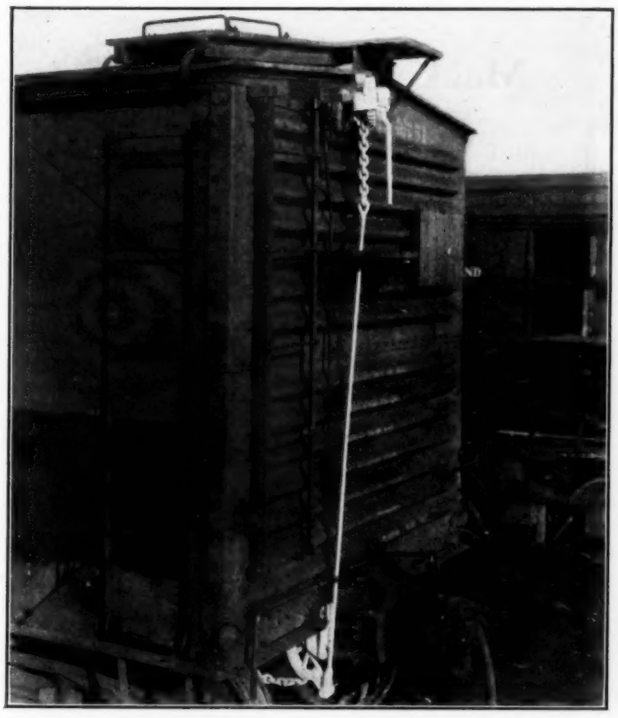
A HAND brake designed to duplicate the power of a 10-in. air brake cylinder is being exhibited by the Klasing Car Brake Company, Railway Exchange, Chicago. It is of rugged construction throughout, all working parts being enclosed and protected from



Details of the Construction of the Klasing Safety Hand Brake

the weather and flying particles of dirt and cinders. There are no springs or parts of light construction to rust or get out of order. Referring to the drawing, power is transmitted from the hand lever through a ratchet to a set of gears and drum on which winds the chain attached to a vertical pull rod. The lower end of the pull rod is attached to a bell crank secured to the end sill, as shown in the photograph, which transmits power through a pull rod direct to the cylinder lever. The bell crank and lower unit works with a minimum amount of friction. Because of the forward movement of the pull rod there is no possibility of the chain overlapping. Power is determined by the leverage of the handle which has been made of sufficient length to develop 4,000-lb. pull when operated by a man of average strength.

This brake is applied below the top of the car, which protects it from damage by low overhead clearances in the case of house cars and from loading buckets, etc., in the case of gondolas and hopper cars. The lower



The Handle and Operating Mechanism of the Klasing is Located Below the Top of the Car

unit is constructed in two parts, the bell crank and the fulcrum, and is applied so as to be well protected at all times. The flexibility of the vertical connection insures its operation in case the end of the car becomes bulged.

A feature of this hand brake is shown in the illustration. The location of the handle permits the operator to stand firmly on both feet using but one hand on the lever while the other is free for him to hold on to the car. The operation of the brake permits the trainman to look ahead and operate the brake at the same time which is practically impossible for him to do when using a club on the ordinary type of hand brake wheel.

Two-Inch Steam Heat Coupler

A 2-IN. steam heat coupler that will interchange and lock with the present standard 1½-in. couplers is being exhibited by the Vapor Car Heating Company, Railway Exchange building, Chicago. It is made with a straight port to relieve friction, and has no parts of either coupler or gasket that obstruct the passage of steam.

Probably the most important feature of the coupler is the locking arrangement. The lock on the top of the coupler head is easily accessible and consists of a specially designed flat leaf spring which moves in a horizontal plane across the opposing coupler arm. It is designed to make a positive lock and steam-tight joint without a crushing the gaskets. The locking action follows the

natural cam motion of the connected couplers and, therefore, has no tendency to damage or distort the coupler locks, arms, cams or gaskets.

The gasket is of special composition and arranged to rock slightly in the coupler head in order to compensate for irregularities and varying position of the opposing gasket face. The coupler is made of malleable iron and weighs but slightly more than the 1½-in. couplers.

Mack 10-Ton Tractor

THE Mack AC 10-ton tractor, with a trailer, is being exhibited by the International Motor Company, New York. Tractors of this type, of which one is shown in the illustration, are in use by the United States Trucking Corporation in freight service for the Erie in New York City. The engine has a brake horsepower of 50. There is a water-cooled oil reservoir cast on the front cylinder block. Oil is double strained and

Mack 10-ton Tractor in Erie Freight Service

fed through cast-in leads. Foot brakes operate on the drive shaft and hand brakes on the rear wheels. The wheelbase is 122½ in. and the turning circle, with a 4-in. tire, 48 ft. The driver's cab is of all-steel construction with vertical sliding doors.

The fifth-wheel which provides the connection with the trailer has large bearing surfaces and is free to rock on a transverse shaft and some sidewise play is permitted in the king-pin so that a minimum strain from the trailer connection is transferred to the tractor. Coil springs cushion the starting and stopping strains. The trailer exhibited with the Mack tractor is manufactured by the Fruehauf Trailer Company, New York.

Metal Sash for Passenger Cars and Buses

IN AN effort to meet the demand for lighter weight in pasenger cars and buses without the sacrifice of required strength, the O. M. Edwards Company, Inc., Syracuse, N. Y., has designed a metal sash which is being exhibited for the first time this year.

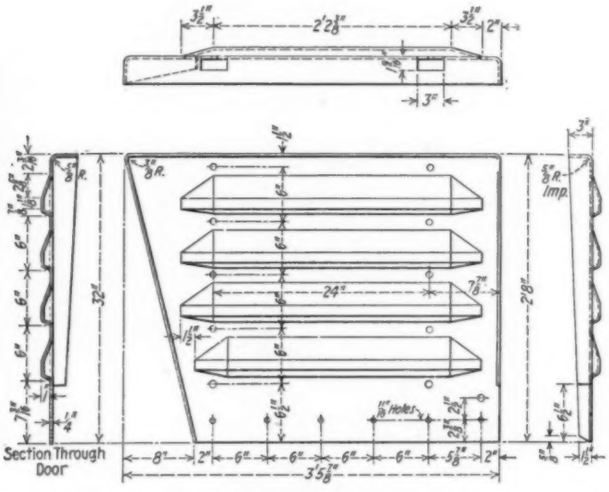
The sash itself is light in weight, and since it requires no sash lock racks, it permits narrower posts, and upper construction as light as is consistent with the needed strength. It is said to prevent effectively even the slightest window rattle and because it gives such a snug fit, prevents air leaks and dust from filtering in.

The sash, made of spring brass, operates on channel guide strips which are securely screwed to each post. It is held against these strips not rigidly, but yieldingly, so that all play is automatically taken up.

Locks placed at each side of the sash give sufficient leverage easily to operate the lock bolts which enter notches in the channel guide strips. It is this feature of design which does away with lock racks.

Viking Corrugated Hopper Door

THE Viking car hopper door, which is part of the exhibit of the Chicago-Cleveland Car Roofing Company, 1617 Kimball building, Chicago, has been improved by the addition of corrugations in the sheets. The corrugations are in the form of a saw tooth instead



The Corrugations of the Viking Hopper Door are in the Form of Saw Teeth

of the usual half-round type. This change gives a larger beam section to strengthen the door and, in addition, makes the door clear more quickly when coal or similar material is being unloaded, because the height of the corrugation is slight.

Sealed Sleeve Bearing

ONE of the recent improvements in motor design which may be seen at the Westinghouse booth is the sealed sleeve bearing. The bearing has been sealed so that dust cannot get in and the oil cannot get out. This has been accomplished by a design in which unbalanced air pressures within the bearing housing have been done away with. Improved dust-caps have also been added. The advantages of the familiar sleeve type of bearing have been retained. With the sealed sleeve bearing, the shaft "floats" on a cushion of clean oil, which absorbs the shocks and jars of starting and running service. By reducing oil leakage, this bearing reduces burnouts caused by oil-soaked windings, and less oilings are required. By sealing out the dust, the bearing wear is reduced.